

MINICAM

For All CAMERA Users



The Miniature Camera Monthly



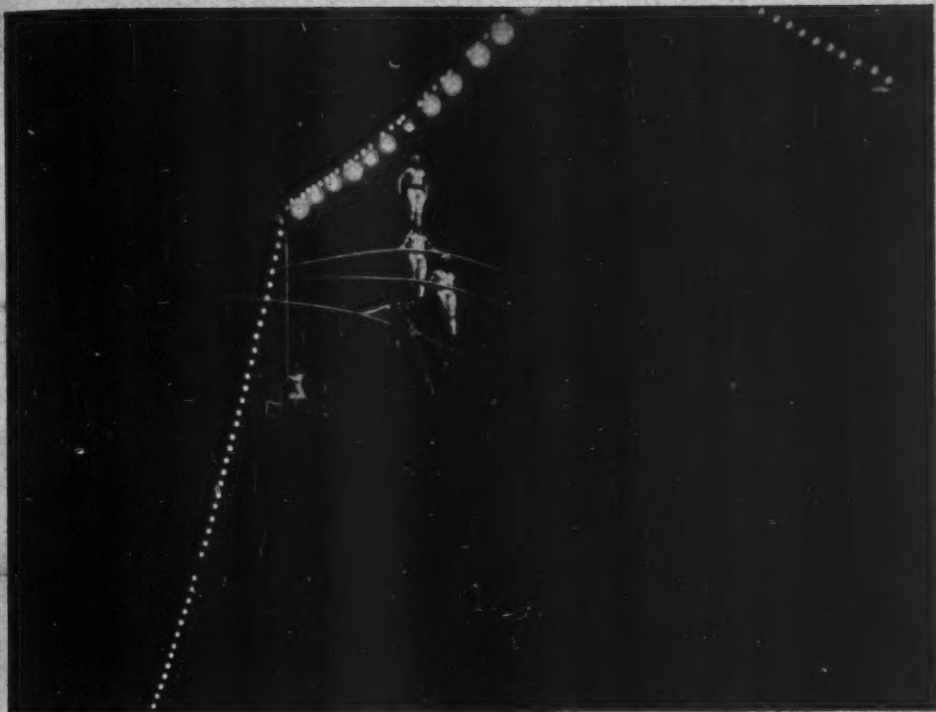
GALS AND GULLS

By CLIFFORD B. PAUL

- Beach scenes call for action, actual or implied. Get your subjects doing something. Photograph them when they're not looking at the camera. Every beach shot need not be a portrait.

Here is a finder-full of girls, dog, beach and birds. No one is trying to stand on his or her head, but plenty of action is implied by the attention of the subjects upon the sea gulls.

"The gulls wouldn't pose," says lensman Paul. "Until I went back to town for feed. First I tried the girl in the blue slacks against the blue sky. This didn't do, so I asked the one in red to do the bird-feeding. The two fair subjects kept trying to face the camera, but I finally succeeded in snapping a pose to illustrate that an interesting beach scene can be informal and different"—Leica camera, 50 mm. lens, f4.5 at 1/100th, on Kodachrome film.



Photographed at night with no special lighting, on Agfa Ultra-Speed Pan film, 1/25th second at f 2.

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Lens Shade

Sirs:

... a glaring mistake in the article "Use a Lens Shade."

On page 55, April issue, there is a picture of a young lady sitting on a fence rail. The corners of the picture are very light in tone, and this is described as caused by the use of a lens shade that was too long.

However, a shade that was too long would cause dark corners instead of light ones.

F. D. CARLISLE.

Birmingham, Ala.

- Reader Carlisle is correct that a too-long lens shade causes dark corners on a print. On a negative, however, the corners would be light. The photograph in question does illustrate the point that a lens shade that is too long will cut off (cause underexposure of) the corners of a negative.

Notes Photographed

Sirs:

I tied a black thread from the radio loud speaker to a chair and hung the notes (cut out of white paper) on the thread to take this with my Eastman Kodak f7.7, Verichrome film. For the vibrating effect, I jarred the string while the



exposure was taking place.
HERMAN L. MYERS,

Worcester, Mass.

D 72 for Film

Sirs:

After reading the article "Fast Developing" in the March issue of MINICAM, I started to kick myself for not writing to you sooner about my experiences. I have been using D-72 for negatives for nearly five years and getting excellent results. Even used D-73, a hard paper developer for developing Agfa Ultra Speed and got a 35 mm. negative which I enlarged to 5x7 without showing grain. I agree with the author of that article that

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RALPH H. THOMAS

Pittsburgh, Pa.

How to Pre-develop

Sirs:

Develop a print first and then expose it under the enlarger. That may sound like an up-side-down way of making a print but I came on to it quite by accident.

First I immerse the paper in the developer for a few seconds. Then I put the wet paper into the enlarging easel and make the exposure, watching the image as it comes into view.

I switch off the current from time to time to examine the progress of the exposure-development, which take place simultaneously. When the image is almost up, I put it in the developer for a few seconds more and then fix and wash as usual.

Enlarger lens should be stopped down so that correct exposure time is about 30 seconds or long enough to watch its progress.

This method avoids incorrect exposure and allows spotting to be done on the print while under development and is especially valuable when making trick prints by means of double exposures, photo-montages, etc.

GILBERTO QUINTANILLA

Monterrey, N. L.,
Mexico.

Violence in Perspective

Sirs:

Here's another "Feet First" like the one in April MINICAM. My pic was taken with an



Argus camera, f11, 1/25th of a second. I call my picture "Big Feet." The boy stood on the ledge of his porch and I got as near under him as I could. No filter was used. The film was Super-X.

HAROLD STERN

Brooklyn, N. Y.

Hollywood-minded Youngster

Sirs:

This is my Hollywood-minded daughter. If she sees me get my camera she comes running

C O N T E N T S

Vol. 1

MAY, 1938

No. 9

MINICAM, the Miniature Camera Monthly

WILL LANE, Editor

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and will do anything I ask. She also likes to read MINICAM.

The reflection in the hand mirror was shot against the light from window at 1/50th second, f4.5. I had to speed up in order to stop her action. This print is about 8 times enlarged. That was my fifth roll of film with my Foth Derby f3.5.

P. A. MULLER

Detroit, Mich.



Sirs:

I received a minicam for Christmas. A bright, shiny little Retina with a case and three rolls of film.

As a kid I owned a small Kodak with three lens stops and a place to adjust it for the approximate distance to the object which I wished to shoot. I went about taking pictures of pets, my friends, and various scenes found while on vacation jaunts over the country with my parents, with fair results—at least one could recognize the people and the places in the snapshots.



The small letter 'f' printed before a number meant nothing to me, nor did the term composition, or the phrase actinic light value. I just carried my little camera around over the country guessing at distances and setting the lens aperture at one of the three stops, depending upon whether the day was cloudy or not.

This was about the extent of my knowledge of photography when I found myself the owner of a little gadget which had more knobs

... Here is the one-
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and scale settings than most of my laboratory instruments.

A few days later I found an old book on photography which yielded a wealth of facts and figures, but still I hesitated to try my first exposure. Then I found a December issue of *MINICAM* at the local magazine stand. The first article to catch my eye was one on taking photographs in the operating room. Now there was something I could understand.

At last I was on familiar ground. As I studied this article it seemed to become a challenge to me. Wouldn't it be great sport if I should try my first shots in the operating room—familiar ground to me—and compare them with those of an expert cameraman who had never seen a surgical operation?

Next morning I went into the main operating room at the Kansas City General Hospital with my Retina loaded with Panatomic. There I found the surgeons just ready to start the removal of a gall bladder which the x-ray had shown was filled with stones. The first shot was made from across the room to show the anaesthetist, gas machine, patient, surgeon and his two assistants. From then on, I took a complete series of successful—I think—shots of the operation, missing a few things, but getting 90 per cent successful negatives.

V. T. HUDSON, M. D.,

Kansas City, Mo.

- From the contact prints sent in, we are inclined to agree with Dr. Hudson's estimation of his fine camera work.—Ed.



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HEADS UP!

By Nowell Ward

"Before the subject comes," that's when the home photographer inadvertently decides the success or failure of many a portrait.

IMAGINE that Mary, maid, wife, or widow . . . wants a portrait. Being a gentleman (we hope) we neither designate nor question her age. You are, no doubt, going to try to prove that you are as good as she thinks! . . . The appointment is at your home and it is evening. An hour in advance, you begin the following preparation.

First, select a piano stool, bench or backless chair and place it about four or five feet from the wall. Remove all bric-a-brac from the background, lest your model-of-the-evening be submerged by it and suffer in comparison, not in beauty, of course, as it is presumed Mary is attractive—at least . . . to you.

The wall, for your purpose, should be light in color and without pattern; if not, two five-cent rolls of light blue, or any other pastel tint, crepe paper will suffice. This paper can be bought in lengths of ten feet and forty inches in width—ample for your needs. Hang it with thumb tacks from the moulding down to the floor and have the edges overlap. You will find that the crinkly

effect of this paper will give a very pleasing background, but avoid obvious creases.

Now place the camera on a firm tripod about six feet in front of the model's seat

- To elicit revealing expressions, a good photographer must combine the qualities of a movie-director and a circus clown. A modern variation of the old "look at the birdie" trick is a concealed bicycle horn. This subject was lighted as shown on a following page in Diagram "B," f/5.6 at 1/10th.



or, if a miniature camera is used, about four feet will be all right. And if your camera has a focusing ground glass or a coupled range finder, so much the better, but if not, the distance mentioned above must be carefully measured and set accordingly on the camera.

Now you are ready for the lights. You will need three if you intend to do any serious work and they do not need to be expensive. To these standards are attached light sockets, preferably which move on a ball and socket. You will also have small reflectors and three small photoflood bulbs. When buying standards, get them high enough to reach up to eight feet, in case you desire at a future time to make full figure pictures. Set your lights in accordance with Diagram "A."

While this is going to be just a head and shoulder picture of Mary, you have previously asked her to confine her garment to one of the pastel shades. The nature of her dress is inconsequential, but its color is of much importance. Black has a tendency to photograph dully, and pure white usually yields a chalky area. Mary is definitely not to wear any rouge,

and should she make an appearance with pigmented cheeks you will act the beautician for the moment and prescribe cream and tissues for its removal. Lip rouge? Yes. This harmless little beauty aid will outline the lips and accent their natural loveliness. It should be used with discretion, though — as also mascara and the eyebrow pencil. None of these beauty lifts is vitally important to the success of your portrait and especially is this true if your model has not been in the habit of using them. Let her use no powder as it gives a chalky appearance to the skin and destroys its texture. The light glow on an unpowdered face is most desirable because it produces nice clean high lights.

Mary is now ready to be seated. Do not have her face the camera directly, but rather pose her in a good three-quarter view as judged from the position of the camera. This will avoid "broad-side" and give modelling to the shoulders. Have her sit perfectly straight but relaxed, avoiding either the extreme leaning-tower-of-Pisa effect or the stiff-as-a-Nimrod pose . . . Now ask her to look toward the lens of the camera in order that you may make a final check on the correct focus of the eyes.

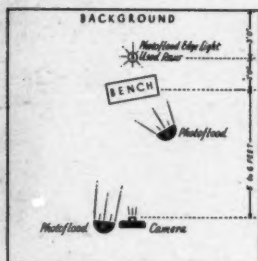


DIAGRAM
"A"

● Three small flood lights used.

Front light No. 1 about $1\frac{1}{2}$ feet from the model and 3 feet above the model's head at a forty-five degree angle, pointing down.

Front light No. 2 used opposite No. 1, and close to the side of the camera, five or six feet away from the subject.

Back or edge light No. 3. In this case it is used "raw" without reflector. Be sure that the figure of the model completely hides the bulb. This light will kill any shadows on the ground and give distance back of the subject. Used at about three feet from the floor, just below the shoulders of your sitter.

Exposure: Using Pan film. With camera on tripod, table or other firm support, set lens diaphragm at f/8, shutter $1/100$ second. Develop in D76 or any other recommended formula.

● Two small photoflood lights used in reflectors.

Place front light No. 1 five feet in front of the model and close to the camera, about 6 inches above the lens. Use a lens shade or be sure to have the light just back of the lens, so no light "spills" into the lens.

Place the back or edge light No. 2 about two feet from the background below the shoulders of your model. This will kill any shadows and help to give a general illumination indirectly from the background.

Exposure: Use f/8 on Pan film, $1/50$ second. This is known as a flat or balanced lighting. Giving the correct exposure will result in a beautifully modeled portrait, with a good range of intermediate tone values. Develop film same as for set-up A. Should you overexpose, the finished portrait will appear somewhat flat, lacking in depth and modeling.

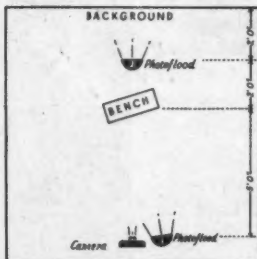


DIAGRAM
"B"



• Some of the finest portraits are made with but one main light, held close to the camera. This furnishes flat or balanced lighting and reveals the contours of face or figure.

This is a good time for you, the director of this scene, to forget your equipment for the time being and give all your attention to Mary. Look her over with a

very stern eye (if possible) — bent on detecting any stray wisps of hair or irregularities in clothing. A little banal conversation ought to do right by your Mary at this point, for you desire, above all else, to keep her from becoming too self-conscious . . . that you may place a

characteristic mood while capturing her personality. . . . She may be thoughtful or gay . . . or even unconcerned. Suggest that she look at a distant object a trifle above the level of her eyes. This is a little artifice commonly calculated to show the feminine eyes at their best. Should she have small eyes she must not look down as this will make them look yet smaller. On the other hand if her eyes are exceptionally large and protruding,

they should be posed slightly downcast.

You will play quite safe if you have Mary glance a trifle heavenward . . . but again you must watch to see she does not look too far in that direction. Be sure you can see the whites on each side of the pupils.

If at this time your model is getting a little fidgety and wishing you would get on with your work, distract her mind (from her eyes) by calling attention to

● For men and older subjects, to delineate character, use the lighting system shown in Diagram "A." Pan film, two small photofloods in reflectors, $f/8$ at $1/8$ th second.





• A light background and single front light furnish excellent modelling for the features of women and children. The edges of the background may be darkened by shading when the print is made. See Diagram "B" for lighting sketch.

her mouth. Invariably, and often unconsciously, she will moisten her lips — which is just what you desire. — More juicy high lights for your picture!

A too-relaxed mouth is inclined to sag at the corners, and if you get this signal think of some apropos remark to make her smile . . . This is indeed a crucial moment for you both. Your cue now is to keep her "happy about the whole thing" and hold enough action to suggest the mood, yet (heaven forbid) you do not want a

grin on the fair one's visage . . . Well, you surely will have won her confidence by this time.

Here is another eventuality. Mary might at this time appear "frozen." If so, ask her to hold the pose for a few seconds longer and to close her eyes; then direct her to look up quickly with sparkle and animation . . . as though expecting a Santa Claus. At this instant, snap the shutter and then repeat the procedure, varying the pose by having her swing around to the other side, close her eyes for a few seconds and then look up with sudden animation.

During the short intermissions between exposures, it might be well to explain to Mary, if you haven't done so before, that a real portrait of which both photographer and model may be proud calls for perfect coordination — and cooperation too (if you want to be technical). She will be glad to do her share in the little drama.

The camera, while these exposures have been made, has been a little above the head of the model and pointing down just a little. This position of your mechanical eye gives the most flattering view of the nose, exposing not too much nostril . . . In the case of a very large nose or a real short upper lip the camera should be lowered somewhat and pointed upward. Mary should be feeling quite at home by now and your subsequent "shots" of her will show marked improvement.

Now for a smile "shot," but first another word of warning about the mouth. It should be closed, but not tightly. Some girls have a tendency to hold their mouths opened slightly but not enough to show the teeth in the finished print . . . A smile, with the eyes, those "windows of the soul" is always pleasing. . . . As a suggestion for another exposure, you might have her hold the same pose but tilt her head to one side, in the manner most natural and becoming, without giving the appearance of falling sidewise. Like a bolt from a clear sky, do not say "smile please," and then expect her to turn on

a "dazzler" . . . if we may coin such a word.

Some people are very reluctant to smile before the camera. Should Mary be of this type it is up to you to use some Mis-direction. Imagine yourself a movie director for the time being.

As an illustration: When the writer was in Hollywood he learned the following trick often used by one of MGM's outstanding cameramen, a man noted for his success in producing spontaneous smiles. Here's how . . . Underneath the camera of this wit-of-a-director (or director-of-wit) and out of sight was attached a ten cent bicycle horn. Whenever he wanted one of those tooth paste smiles he simply tooted the horn . . . This amusing device never failed . . . It was sure fire . . . but perhaps you can think of a better one.

More than one good director makes faces and performs antics to get a rise out of hesitant subjects.

By experience you will learn that the time to make the smile exposure is just as the smile is settling down . . . a little matter of your pressure on the cable release being a split second after the smile — that's all. This you must do; otherwise, if you make the exposure at the peak of the smile, undesirable lines will appear about the eyes and the gums above the teeth may show. It is unnecessary to note here at this time that a smiling mouth with badly shaped or unevenly spaced teeth should never be photographed — not even in a "smile for mother" portrait.

When you make your "shots" outdoors, the suggestions for posing are much the same, but with certain cautions.

Avoid brick walls and ugly fences for backgrounds . . . Remember, please, not to place your model in direct sunlight. Use a shaded spot where there are practically no direct rays of sunshine . . . And are you going to get a big kick some day when you try a portrait outdoors when the sky is overcast (and your heart downcast with doubt) to find your reward a lovely likeness! Try it and see.



"CHOICE OF CEREAL—BACON AND 1 EGG"

By JAMES PICKANDS, II

From Des Moines Third Annual International Salon

● Portraiture is possible without a human subject. The above is made of a hardboiled egg surmounted by a piece of shredded wheat. Nose and ears are of puffed rice, and glasses of copper wire. Wrapped around the paper collar is a slice of raw bacon. The title, a quotation from a restaurant breakfast menu, suggested itself as the parts were being glued together.

Says lensman Pickands, II, "I have been branded everything from a surrealist to a candidate for the nearest mental institution for producing it." Nevertheless, the "egg man" found favor and has been hung in the most conservative and sedate exhibitions. To date, it has been accepted by the juries of ten international salons.



Circus!

By Philip H. Bailey

PHOTOGRAPHS BY THE AUTHOR

Treat *Mini* to the Big Show. In the Barker's words, it's the "thrill of a lifetime."

"RIGHT this way, ladies and gentlemen—hula girls, snake charmers, el-y-phants!"

You can hunt a long time to find in one place everything from sombre shots of trains unloading at dawn to menagerie tents filled with nervous jungle cats. Yours for the asking are flying trapeze artists, puff-cheeked trombone players, and freak performers, to say nothing of the host of graphic studies in myriad sight-seers' faces.

I know. I was at the yards with the crack of dawn, my Leica over my shoulder, and just in time to witness a circus accident. I was snapping wagons being pulled off the freight cars and was getting ready to take pictures of the big top rising.

"Look out," some one yelled.

The next instant, ropes, cars, wheels and canvas started falling around me. Ominous snarls rose over the wreckage. A leopard cage had broken loose and smashed into a tent! Scared roustabouts, faces white as flour, went groping for the lost man-eaters who were growling in the wreckage.

By good fortune, the cage was intact, and no one was hurt. But I, and everyone in sight, had a narrow escape.

This brings me to the moral. When a showman warns you

- Night shot (top), 1/2 second at f/2, Super X film.
- Pawing the air (left). Stopped at 1/1000th of a second, the beautiful white animal looks almost like the famous horse and the beautiful Helen of Troy.
- Bicycle acrobats are not easy subjects as light under the canvas top is less bright than indoors in the Chicago stadium or New York's Madison Square Garden.
- Kneeling for a low angle shot, I snapped Happy Kelly in a pensive mood.





to be careful, listen. Danger lurks around every circus corner to strike at the careless. Horses that may accidentally trample you as they race out of the big top's backdoor, or tigers that may rip your hand or smash your camera if you stick it through the bars at the wrong moment, are but a few of the dangers.

In taking performers in action, use the principles learned in stage photography—catch your picture when there is a break in the routine. Get the action at its peak, at the split second when the movement momentarily stops.

I took many pictures from a squatting position. It aids getting the unusual angle needed to portray unusual subjects. Good angle shots also can be made from atop a wagon.

I was lucky enough to be at a performance
(Page 80, please)

- Roustabouts (top left), whether they are aware or not, furnish good "atmosphere" material.
- The morning shampoo, f6.3, 1/200th, Eastman Super X.
- "The Big Pull." Note how the mud shines on the legs of the pachyderms pulling a wagon out of two feet of mire. A month later, Vance, the bull in the foreground, killed his trainer.
- "Shaking up the Midway." The hula dancer, being mostly in the shade, was taken at f4.5, 1/200th.
- Don't forget to shoot the spectators. Their interested faces, watching an act or an animal, may give you your outstanding shot of the day.
- Chewing camel. Animal portraiture is lots of fun and you can avoid the bars that spoil animal pictures in the zoo. f4.5, 1/100th, S. S. Pan.





"UNDER FULL STEAM"

KOLLAR FROM BLACK STAR

- This remarkable "action shot" was obtained from a stationary train by swinging the camera in a left-to-right arc while snapping the shutter. Note that the blur of rapid movement is apparent not only in the train but also in the foreground and in the background trees! Exposure $f/8$ at $1/20$ th.

What Price Shutter Speed?

By Jacob Deschin

HOW FAST? The question of shutter speed is only half solved by saying, "Use the fastest speed the light will allow."

Correct shutter speed is as important as correct lens opening.

The press photographer generally seeks to stop action completely. The pictorial-

ist, however, prefers at least a slight show of motion. The latter feels that a suggestion of movement, even to the extent of slowing down the shutter sufficiently to get a little fuzziness, is more important than stopping movement so completely that the flying subject is sharply etched in space. The accompanying illustrations
(Page 78, please)



1/100th

- Pigeon alighting. The bird was snapped just as it reached the man's hands, its wings still in rapid agitation. Shutter speed, 1/100th of a second. Too slow to catch the movement.

- At 1/200th second, the same shot catches most of the wing action. Note the slight movement shown by the wing. All of the picture is sharp except the wing tips. This conveys the impression of the fluttering bird better than the sharper picture below.



1/200th

- Frozen at 1/500th. Too-fast shutter speed results in a lifeless statue effect.

1/500th

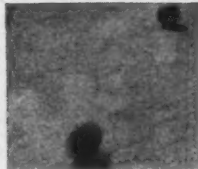


- Croquet ball. At 1/500th second, the ball is stopped dead. Only the position of the mallet momentarily inside the near wicket gives an indication of movement.

- At 1/300th, the sense of motion is clear and exhilarating. The motion is emphasized by contrast with the untouched ball.

- But it can be overdone. Too slow a speed is bad, too. At 1/100th second, you have motion alright, but the ball is fuzzy and formless.

1/500th



1/300th

1/100th

- Dancer, at 1/50th second (top). Except for the lack of definition in the brightly lighted hand in the foreground (due to movement, not off-sharpness), the motion in the skirt and the other hand are not objectionable. The shot was made just as the dancer had poised herself on her tiptoes and while hands and skirt were still in motion. Had the dancer's legs been in motion as well, 1/50th would not have been enough satisfactorily to stop movement.

- Oops. ("Excuse it, please!") A sense of movement was achieved here at a shutter speed generally considered too slow for dance photography. 1/100th.

- The next shot (below), at 1/500th second, stopped every part of the movement. The arrested pose and the flying skirt leave no doubt that the subject is in rapid motion.

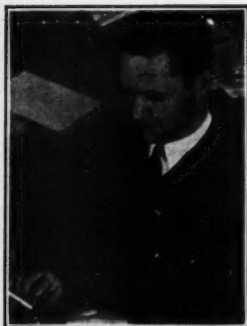


- The bat of an eyelash (right). At shutter speeds from 1/25th to 1/1000th second no appreciable difference was noted in the photographing of a moving eyelid. At 1/10th there was some slight appearance of movement.



Angles for the Beginner

By Jack O'Neil



- A good example of bad selection of pose.

Fig. 1



- Better, but still a poor portrait. The subject seems to be saying "Okay, shoot, I'll pose this once, but make it snappy."

Fig. 2

- This is more like it. Pose, expression and bodily attitude are all right. As for the background, the photographer forgot to notice it—but the camera didn't. (below)

Fig. 3



Selection is a number one problem—the success of any picture depends on subject selected, background, foreground, lighting, expression, etc. Select wisely and you will photograph successfully.

THE first impulse of the beginner in photography is to shoot without discrimination for the mere sake of shooting, from the sheer excitement of manipulation, the pure joy of snapping a button and capturing an impression on film.

But the delirium does not last and before long the novice finds a growing desire to do better. He no longer shoots indiscriminately but studies carefully the available subject-matter that lies before him. Thereupon, wisdom is born and the novice takes at last the endless road to perfection.

Selection of a suitable pose in portraiture seems to give considerable trouble to the beginner. Leaving aside the problem of catching the characteristic what-have-you of the particular subject you are photographing, there are certain things that must be considered purely from the prosaic viewpoint that a worth-while photograph, whether it be a portrait or anything else, must "look right." If it is to be a portrait, let it be forthright a portrait and not some half-hearted attempt betraying a suspicion that perhaps the picture may not "come out" after all, so why try too hard.

Fig. 1 is an example of what not to do. The apparent industry displayed by the subject may be fine for propaganda purposes in anticipation of asking the boss for a raise. But, then, the boss might be justified in making a contrary interpretation of the picture and accuse his employee of sleeping on the job. In short, this is not a portrait but an attempt to take a "candid" picture that did not work out. There is no point in the pic-

ture to hold interest. The eyes of the subject lead down to the typewriter, but they might just as well lead to nowhere for all there is to see.

While Fig. 2 presents a vast improvement, it still falls considerably short of the true portrait. The subject is stiff, his expression seemingly that of amusement at the photographer's antics and the attitude generally indicates a mild impatience with the photographer's persistence. The subject appears to be saying: "Okay, shoot; I'll pose just this once, but make it snappy—I have to get back to work." However, we can say at least one good thing for the picture: the subject is actually facing the camera and there is no doubt whatever that the chief and most dominant point of interest in the picture is the face of the subject. And that's a good start.

Understanding the faults contained in Figs. 1 and 2, we make a third attempt with the intention of avoiding these errors and the result is Fig. 3. Leaving aside the question of background, with which for the purpose of this article we are not concerned, the pose of the head, the facial expression and the attitude of the body cannot be quarreled with. The subject is completely relaxed, and this relaxation is easily noted both in the face and in the hands.

This discussion applies more or less to the formal type of portrait. In these days of candid portraits, the problem may be somewhat different, but in general a portrait is a portrait, whether it be candid or "straight." Naturalness is the chief objective, stiffness always to be avoided.

One of the chief problems facing the beginner is that of selecting out of a welter of material the particular details

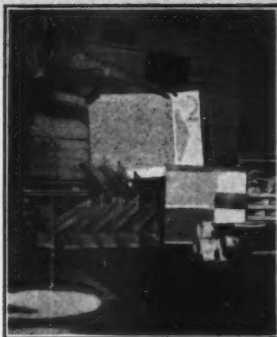


Fig. 4

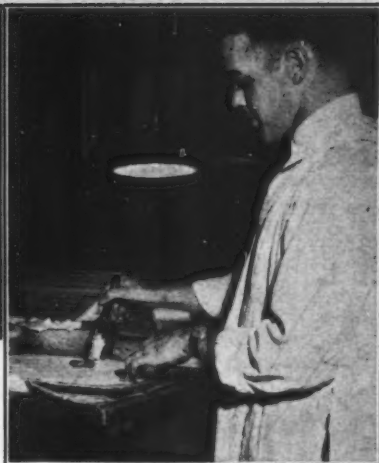


Fig. 5

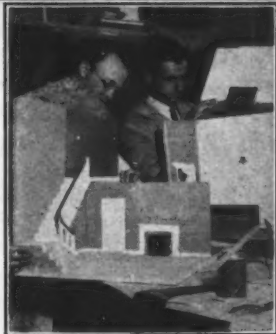


Fig. 6

● Which of these three scenes, illustrating building of miniature sets, is the most effective shot?

towards which to point his camera. For example, take Fig. 4. Here we have nothing but confusion. The eye is caught by the brightly lighted card in the man's hands, by the white cigarette in the man's mouth, by the horribly out-of-focus dishpan in the lower left. It flits hither and yon and settles nowhere. There are miniature wallpaper designs, rolls of paper, a group of miniature staircases. But it is all a jumble.

Fig. 6 is only a trifle better. It shows us interiors of doll houses, carelessly arranged and therefore unintelligible. What are the two men doing behind this paraphernalia? For all the use they are, they might just as well have been left out of the picture altogether.

Fig. 5 is what we are after. An isolated detail that tells its story clearly and without doubt. The subject is

using a paste brush and the camera shows us how he does it. It shows the back of a sheet of the wall paper that was so confusedly presented to us in Fig. 4, it shows the board on which the paper rests as well as other details pertinent to the operation. This is one picture. We move along and take another shot of another man engaged on another detail that is a part of the whole. Thus, by a series of pictures, we can tell a complete story when a single shot will tell no story at all.

Perhaps this may seem an exaggerated case. Actually, it is not an uncommon one. The "assignment" calls for the photographing of a workshop in which a group of men are engaged in making doll houses. In this particular case the operations were scattered through a group of rooms but even if they were concentrated in a single, small room, the problem would have been the same. Barring the usual exceptions, you cannot give a photographic impression of a number of operations in a single picture and expect to make yourself clearly understood. Take one picture at a time is a good slogan to adopt, and it does not make any differ-

● Only by means of a closeup can the bird tracks be shown and the meaning of the walk made apparent.



Fig. 8

ence what type of photograph you are taking, one picture at a time is all you are allowed. General rules are dangerous to make but this is one that

no one will dispute, for, after all, one picture at a time is all you can see.

The selection of the correct point of view, or at least one correct point of view, for the particular story you are trying to get across, is another problem to be decided. It is not a case of pictorialism, of what looks best and most agreeable. You aim the camera in order to include in the view something that you want to show in the clearest and most emphatic manner possible to the photographic medium. Your subject may

present several aspects; it may offer a number of interesting features that can be recorded photographically. But in order to indicate the one feature you think most pertinent, you must select the one point of view that will present this most clearly and, therefore, effectively.

A case in point is the picture of the garden walk illustrated in Fig. 7. This garden walk in a hobbyist's backyard is a unique sort of garden walk. It consists of slabs of cement irregularly shaped, but they are not ordinary slabs, for each one has "engraved" upon its surface the footprints of birds and animals "collected" by a naturalist while roaming sand beach and mud



● One interpretation of a Garden walk in a hobbyist's backyard.

Fig. 7

flat. Had you not read this information before looking at the picture you might not have been aware of this. However, despite this, the picture is not to be considered worthless altogether. It depends on what you wanted to show. If you wanted to show the complete walk and how it leads up to the back door of the house the picture would be a fair presentation, although a higher viewpoint would have been better.

But to complete your "description" you would have to take a second picture, actually to show how the individual stones bear the impressions of the footprints. This has been done in Fig. 8, which distinctly shows the footprints. In this case the camera was brought closer and set up to cover an area that would include a few of the stones rather than the entire walk. A telephoto lens at an appropriate distance and height might have served the purpose better by cutting down perspective and rendering the stones in the approximate proportions and sizes of the originals. However, this is no great drawback in this particular case, since the principal feature involved is the designs of the footprints themselves rather than in the matter of size.

The pictorial description of the walk could be extended further by photographing smaller groups of stones, showing clearly all the footprints included in the walk. But the two pictures shown here illustrate what we mean by the proper selection of viewpoint. The main factor to consider is what we are trying to depict and to select the viewpoint that appears to us to do this most efficiently.

The ability properly to select suitable subject-matter, the correct point of view and the right pose in portraiture is not exclusively the gift of years of experience. Experience certainly is a help and a necessary essential to the highest type of workmanship, but anyone with ordinary common sense knows what is important and what is meaningless. It is an everyday experience to select from a variety of material one focal point at a time on

which to rest the eye. We may look at a number of different things all lying in the same general direction but we look at them one at a time. And so with a picture.

The same with the point of view. Let us return to Fig. 7. If you really wanted to see the garden walk you would not be satisfied with this one sight of it. You might just as well not have come at all, for the real view of the garden walk, that is, the view that will reveal to the sight the footprint engravings on the stones, is not to be had without a shift in one's vantage point. We have to come closer and look down, climbing to an elevation in order to see several of the engraved slabs at a time.

The same with the pose in portraiture. All of us have at one time and another had occasion to pass judgment on the portraits of our friends and members of the family, so we all have some notion of what constitutes a good portrait. Mind you, it is not to be inferred that anyone without photographic skill whatsoever can take a good portrait. That is not the point. What we are trying to drive at here is that most of us are equipped with a sort of man-in-the-street faculty of recognizing a really bad pose, that is, an unsuitable, awkward or silly pose. And most of us do recognize naturalness in a pose and do appreciate it. And so it is with pictures.

Developing a Masterpiece



● "And now I'll show you Dick's darkroom—we'll surprise him!"

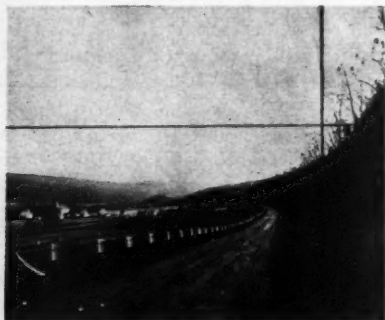
Being Critical

Discussing prints—for better or worse—
and how to improve them.

VISTA

TWO things strike our eye at once: the emptiness of both the large expanse of sky and of the road. The use of a medium yellow filter with the necessary increase in exposure would have kept the sky from being so absolutely bald-headed even though there may have been no clouds in sight, but trimming the print to the horizontal line gets rid of most of this feeling. More cropping at the right removes an area that is not paying in added interest for the space it uses. Cut down this way, the picture becomes a more closely knit sample of landscape work.

It needs one thing, however, to add a sense of life and timeliness—a figure of some sort on the road. When you try a shot like this one again, get some member of the party to walk along the edge of the road down near the second telephone pole. The addition of this little detail will make the resulting picture many times more effective.



• "VISTA"—1/25th at f/11.

TOUGH GUY

A SELF-PORTRAIT—if portrait it should be called—made with the aid of a mirror. The general effect is evidently what the maker intended, but several minor faults lessen its effectiveness. The plane focused upon is a little too far back making the hair and the upper part of the face less sharp than the ears and neck, over emphasizing the latter. The lighting is too flat for a dramatic thing of the kind.

The 'tough' idea would have been better carried out if there were more prominent



• "TOUGH GUY"—Eastman Portrait Pan, 1 second at f/8.

shadows of stronger side lighting. The nose is not adequately outlined.

The light area in the upper right corner might well be printed in to a darker tone, and the wickedness of the tough guy would be more pronounced if his cigarette were nearly gone rather than awaiting a light.

The placing of the masses is good, and the distortion that so often is found in these large heads is pleasantly absent.

MAX

MAX has the usual fine head of the bloodhound (at least, that's what we think he is), but this time he has too much

head and not enough Max. He is standing a little too full-face when a three-quarter view would be better, and if the camera had been farther away when the shot was made there would not

• "MAX"—Finopan, 1/10th second at f/11. Bright sun.



have been the distortion that has made his hind quarters seem so insignificant. The extra distance would have permitted the inclusion of his feet without either tilting the camera or holding it so low as to make him appear taller than he should. The whole effect would have been better if the shot had been made with the lens opened more. The stopping down used here has made the depth of field enough to show the white bench posts too clearly.

THE BROOK

AN attractive print of a comfortable, sunny country scene, "The Brook" misses being a fine picture. The exposure was good and the depth of field well calculated to give depth to the picture. However, the lower right corner is uninteresting and seems to call



• "THE BROOK"—S. S. Pan, 1/25th at f/5.6.

for a view-point a little more to the left to reduce the area devoted to the bank of the stream and concentrate the interest more on the water itself. Trimming on the vertical line does not quite do the trick although it does help the composition some.

The entire upper section (above the horizontal line and especially the heavy tree trunk) detracts from the whole and should be cropped. An excellent detail is the action in the water. There is a distinct feeling of motion and life without too much blur. Too often the photographer, confronted with the necessity of stopping motion in a landscape, succeeds only in freezing it. It requires real thought and care to avoid the tight effect of too short an exposure and the fuzziness of one that is too long.

• Contax with Eastman Super-X, 1/25th sec. at f/5.6, from the top of the Municipal Building, New York. Negative developed in Champlin No. 7. Enlargement 12 diameters.

THIS needs a small boy with a fishing-pole. The bridge is attractive and the day was pleasant and the spot was idyllic, but the picture has no definite center of interest to warrant its making. Almost any living thing properly placed in the picture would have given it point and interest; the photographer's companion gazing at his reflection in the water would have been enough, but as it is, it is lonely without dramatizing the solitude enough to make that the theme. Technically, a light or medium yellow filter would have improved the water and kept the sky from being so entirely dead.



• Vollaenda with Super-Sensitive Pan; 1/10th sec. at f/11.

TRAFFIC PATTERN

This has the makings of a good pattern picture, but too much has been included at the right; the composition is helped by trimming approximately to the black line and eliminating the empty area that adds nothing to the whole. Of course, this gives us a picture that is nearly square, but who ever proved that a picture could not be square? The conventional print is rectangular, but the composition should be the controlling factor in determining the shape rather than a set rule that keeps us perpetually in an eight by ten or eleven by fourteen straight-jacket. The maker of the print has caught the feeling of motion in the autos without having them so blurry as to be unpleasant, but a better choice of paper would have resulted in improved print quality.



SHOOT THE SPARKLE

By Alexander Lindey

Not ordinary water scenes, but extraordinary seascapes are what we want.
Wait until wind and sun are just right and any lake, stream
or body of water will do.

WATER — water — everywhere — and not a drop to shoot. Up to this spring, my camera and I have eyed water in every possible photogenic form — or so I thought. We had enjoyed the possibilities of water in a tumbler, in the bathtub and on a microscope slide. For something new and startling, we went gunning

for water in its native habitat. And came back with startling, sparkling scenes.

Photography is a form of creative expression of which the chief medium is light. Without light there is no picture; the more effectively light is used, the better the result. In no field of picture-taking can light be more brilliantly employed than in the portrayal of water.

This is particularly true of what I call sparkle pictures. I use the term to designate shots in which, by reason of the play of light, the refractive qualities of water in motion are exploited to the best advantage. Ordinary river-scenes and lake-views and seascapes are old stuff; sparkle pictures present a fresh variation.

A good sparkle picture should fulfill certain technical (as distinguished from artistic) requirements. The water should look convincingly liquid. There should be an illusion of movement. The glitter should be luminous. The non-shimmering portion of the picture should forfeit no clarity of detail.

Let's see how shots

● Light yellow filter. No wind, f16 at 1/50th. Sun to the left of the center of the picture. Waves caught at the instant they began to recede. Film: Panatomic. Camera: Kodak Vollenda. Belle Harbor, Long Island. Fig. 1





Fig. 2

• Sun approximately midway between zenith and horizon, and slightly to the left of the center of the picture. Brisk wind. Film: Panatomic. Camera: Super Ikomat A. New York Bay. Spring. Light yellow filter, $f/11$ at $1/50th$.

of this kind are made. You don't need an expensive camera with a super-fast lens or elaborate accessories. Practically any miniature camera will do; an $f/4.5$ lens and a shutter speed of $1/100$ are adequate. An exposure-meter, preferably of the photo-electric cell type, a light yellow filter, a lens shade and a tripod can be used if available.

Your subject-matter will depend on where you live and how far you care to walk or travel. No matter where you are, you can get to some body of water—stream, river, pond, lake, reservoir, sea—without much trouble. In New York City, for example, the possibilities are limitless. The Hudson River, the Harlem River, the East River and the Bay (see Figs. 2 and 3) are at your door; beaches

(see Fig. 1) are within easy reach. If you cruise to the tropics, all you'll have to do is to look over the rail.

If you've found your water, bear in mind that it is to be the dominant element in your picture. Conventional photographs in which water is subordinated to skies or boats or shorelines have been done time and again. What you propose to do is to concentrate on water, and to recreate its dazzling expanse, its aliveness and its fluidity in your final print.

Winslow Homer knew that water had a beauty and an integrity of its own that

required no extra trappings in the form of boats or human beings. That knowledge, coupled with extraordinary technical skill and austerity of conception, made him one of our greatest artists.

Since water is to be your quarry, get as close to it as you can. Excellent shots can be made from bridges, piers and ocean-drives, or at beaches.

Choose a breezy, sunny day. You will then find that there will be directly below the sun an area of glittering water, flanked on either side by less brilliant stretches. There may or may not be objects of collateral interest. Your task will be to synthesize the scene into a pictorially and photographically balanced whole. To do this you will have to observe three things: (1) the position of the sun, (2) the velocity and direction of the wind, and (3) the character of the water-surface.

As to the first, bear in mind that if you are to get any sparkle at all, you must to a limited extent shoot into the sun. But do *not* include the sun in the picture. Choose mid-morning or mid-afternoon:

a time when the sun is high enough not to penetrate your lens, but low enough to create a glitter. And by all means use your sunshade. This will not eliminate glare from light shining directly into the lens but will eliminate light from outside the lens' field of view.

As to point 2, remember that your water must be in motion. A dead-calm expanse will reflect the full glare of the sun, and picture-taking will be impossible. A number of things can roughen the texture of a liquid surface; the best for your purpose is a breeze that is sufficiently brisk to cause good ripples. Second best is the use of sticks and stones to put the water into movement.

As to point 3, study the nature of the agitated water. Finely crinkled water is photographable, but sometimes it yields an area of dazzling sheen, as in Fig. 1, which may act as a mirror. You will have to cut down on your exposure. Fairly large ripples will give effective pin-points of light, and if your exposure is correct, you won't lose detail in the darks. Water which is violently disturbed

● New York Bay. Light yellow filter, f8 at 1/100th second to catch fast moving craft. Slight breeze. Sun to the left of the center of the picture. Panatomic. Super Ikomat A.
Fig. 3.



may catch and reflect enough of the sun to ruin a negative.

Next comes the matter of exposure. Your electric meter will be of help, but if you think that it will automatically solve your problem, you're mistaken. The usually reliable rule-of-thumb — that of taking your reading from the principal object to be photographed, and letting the rest take care of itself — won't work here. As we've seen, water is to be the protagonist. At what part of it will you point your meter? At the sparkle-area? If you do, the indicator will register tops and the rest of your picture will be under-exposed. At the non-sparkle area? If you do, the glitter-part will be over-exposed. A sky-reading won't do either. You will have to read both water surfaces — sparkle and non-sparkle — and strike an average.

If you want a pseudo-moonlight effect, as in Fig. 3, take the reading almost entirely from the sunlit surface.

Let us assume that your meter says $f11$ at $1/100$. You are going to use your light yellow filter to control the glare, obviate fuzziness and balance the sky. The filter factor is two. Your exposure will therefore be $f11$ at $1/50$. This aperture will give you sufficient depth of focus, and the shutter-speed will catch the water in motion under ordinary conditions. If there's a high wind, open up a little more, and shoot faster.

Don't get in too much sky. If you want minor accents, use boats as in Figs. 2 and 3, or foreground material such as a wooden pier.

If you're doubtful about exposure, take several shots at what you believe to be the correct speed, one at half correct exposure, and one at twice this exposure. The angle at which you are shooting influences your exposure. When you're almost level with the water, the bright-crested waves tend to blend into a solid gleaming stretch; and exposure may be shortened. When shooting almost vertically downward, as from a bridge or a boat-deck, there's a greater separation

of the pinpoints of light and greater exposure is required.

The ideal angle is about 45 degrees downward.

Don't hurry. Sunlit, breeze-swept water has a chameleon quality. A passing ship, a cloud, a change of wind, a swirl of the current, will give it a new aspect. Watch the sparkle-area. It will weave itself into constantly shifting patterns. Remember that a wide, uniform avenue of brilliant water holds no special interest; the sparkle must compose itself into some design. Capture if you can a gleaming serpent darting horizonward.


Don't hesitate to revisit the same spot. Few subjects can be fully exhausted on one occasion. The second time you go you will have the benefit of the lesson taught by your first efforts. Different seasons and atmospheric conditions will lead to a surprising variety of results. Almost obsessively interested in the study of light and color, Monet, the great French impressionist, painted his lily-pond over and over again, and each time he seemed to catch some new aspect of luminosity, to discover some fresh formula of chromatic beauty.

Any good film will serve. Develop for brilliance, and project on medium paper. Contrast paper will emphasize the shimmer, but will lose detail. If you later desire a pseudo-moonlight effect, from a correctly-exposed negative you can over-expose the print while enlarging.

A full-scale photograph utilizes the tone scale from absolute white to blackest black. A successful sparkle-shot does just that, and does it arrestingly with almost any body of water.

MINICAM \$175.00 CONTEST

"Sparkle" pictures, as well as any others in which water appears, are eligible for the new "Water Picture" Contest. For details see page 60.



FUN IN THE RAIN

By S. J. Ressetar

● An easy way to keep the camera dry is to shoot from the inside looking out; 1/10th at f4.5 with camera resting on a table.

When showers fall, take a new inventory of pictorial possibilities. A usually drab scene may become an "unusual" shot.

SPRING showers for May flowers and rain pictures!

Do you hide your minicam on the shelf when gusty winds blow sheets of gray cloud and rain across every picture possibility in the neighborhood?

Judging from the scarcity of good rain pictures you're hanging your head, saying, "What! Try to take a picture worth a hoot when you can't even see your own shadow?"

Try it. Dust off your minicam. Take along a lens shade to keep the lens dry and also some lens tissue. An umbrella, raincoat and tripod may come in handy.

Rain pictures are always interesting and unusually profitable because there are so few. Most amateurs balk against wet feet and run faster than a pan of spilt hypo when it thunders. But if you're willing to conquer a sniffle or two you can round off your fine collection of gay, sparkling, "sunshiny" photographs with a dash of somber, moody, thrilling prints that will more than repay you for the trouble of wearing those overshoes and

carrying the umbrella to hold over the camera while exposing.

Orthochromatic film has what it takes for rain pictures; having more contrast in the characteristic grayness of rain atmosphere. I often use a fast pan film, however, in order to get maximum speed under adverse light conditions.

You can conjure up adequate contrast afterwards with a hard or contrasty print paper. And you will be sure to give rain negatives full maximum development.

As you're not used to snapping shutters in gray light and shadowless weather, use an exposure meter, whether it be the inexpensive visual extinction type or a photo electric cell. The range of tones are limited in rain pictures. Accurate exposure is necessary.

A yellow filter will help penetrate haze if it gets too thick when you want to bring a distant building or skyline into view. The filter also will come in handy, if rain suddenly gives way to gorgeous clouds.

Shutter speed is important in regulat-

ing the amount of haze. Speeds such as 1/50th or faster tend to penetrate haze and mist. In a scene with the misty illusion of distance you may want to take exposures running several seconds or even minutes, so carry your tripod. If rain is falling at the time, let it fall; it will not register on the film.

When you develop your negatives you may be surprised to find that the emulsion saw things which were invisible to the eye at the time.

Like charity, suppose we begin at home. Select some suitable window with a rain splashed pane and focus on the rain drops. You will find it necessary to do some maneuvering to catch the modeling of the drops. You might introduce a figure at the window. Stop your diaphragm down enough to give definite

form to the background, and shoot.

For your next item, you might try some rain shots in conjunction with a transparent umbrella, possibly with the fair user under it.

In your car, you can shoot street scenes through the windshield. Snug and dry inside, you can take plenty of time. Focus on the raindrops.

The protective shelter of an awning or doorway also makes a good vantage point from which to stalk pictures in the rain.

Next, try shooting suggestive mud puddles; tramping feet; water puddles with reflections; wagon wheels sunk in mud; rain spouts or a pattern of wet cobblestones.

You will find your diaphragm openings will range from f6.3 to f3.5 and that

● Taken in the rain from the top of a moving bus, 1/50th at f2.8, Super Ikonta B.
The slight fuzziness helps to put over the print's idea.

"RAIN AND WARMER"

By RICHARD WURTS





● If it's raining too hard, you can shoot through a cellophane umbrella.



● Through a window.
● Or through a windshield.



your exposures will range from 1/10 to 1/40. Speeds higher than 1/40 have a tendency to freeze the liquid lines of the picture as well as cut or eliminate the essential atmospheric haze.

When night falls, enchanting effects can be made in the rain of otherwise dull and prosaic material. The cloak of darkness and glistening pavements with light reflections have a beauty all their own. They offer rich pictorial material.

Exposures at night are usually a matter of conjecture on experience. If there are no bright lights near, give it one to three minutes. To insure getting the picture, it is wise to take a few extra frames — say one at some arbitrary speed, the next at half the speed and the third at twice the speed. At night, use Ultra Speed film.

Material to be shot in the rain is limited only by one's imagination and skill. Any locale, whether it be city or village will serve the enterprising minicamerist equally well.

It is comparatively easy to make a picture when nature smiles and conditions are ideal. Why not test your ability and conquer the vagaries of nature by "shooting in the rain."

Remember (1) to keep equipment dry. (2) Rainy days are dull days. Increase exposure.

Send your Rain pictures in to MINICAM. Read about the \$175.00 "Water Picture" Contest, page 60, in this issue.

Hollywood

STILL-MEN GO FOR MINICAMS

By Philip H. Bailey

Many are the still pictures being taken on the movie lots and by minicams in place of the old 8 x 10 view cameras.

"HOLD it for a still!"

That's a familiar call you hear on Hollywood's sets. After a motion picture "take", if it's an important one in the production, it has long been the duty of the still photographer to get a shot of it with a bulky 8 x 10 or 4 x 5 camera. An assistant director informs the film cast to hold a rigid pose such as they were in

during the filming. After an excursion under the dark cloth, focusing the scene on the ground glass, the photographer snaps it.

But the miniature camera is rapidly changing all this. You don't have to hold it for a still with a minicam! With the small cameras, stillmen often shoot their pictures while the big motion cameras are grinding away under their soundproof hoods. And furthermore the shots are more natural than those especially posed.

What have you in common with a Hollywood stillman? If you have ambitions of selling your prints to editors, as many amateurs have, you have a good deal in common. Stillmen have to shoot saleable pictures! However, they don't have to sell them as you or I would. Disposal of the prints is up to the "picture

planter," as publicity men who place pictures with editors are called.

"Where do minicam shots come in," you say. Candid camera shots of stars are being demanded by more and more picture magazines like *Life*, *Look*, *Pic*, *Photo*, *Picture* and


● Testing. A gray wedge, a color wedge, and a beautiful girl—all three are photographed at once by the Technicolor camera. This test film is developed and correct exposure determined before shooting of the actual picture begins.

● Lining up the subject. The needle-sharp pictures you see on the screen are not obtained by guessing distances but by measuring them with a tape, as in this scene from the Paramount movie, "Thrill of a Lifetime."

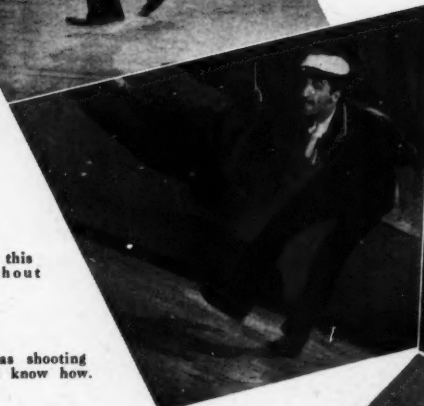
● The secret of a movie blow. Note George Brent's fist is not clenched as he knocks out the villain in Warner Bros. Technicolor picture "Gold Is Where You Find It."




Series shots, no fun for bulky 8x10 plate cameras, are duck soup for the Leica of Malcolm Bulloch, Paramount candid cameraman, who made these shots of Ben Blue's famous skateless skating dance during the filming of "Thrill of a Lifetime".




● Listen to that music. Now for a flying start.




● Anyone can do this but not without skates.



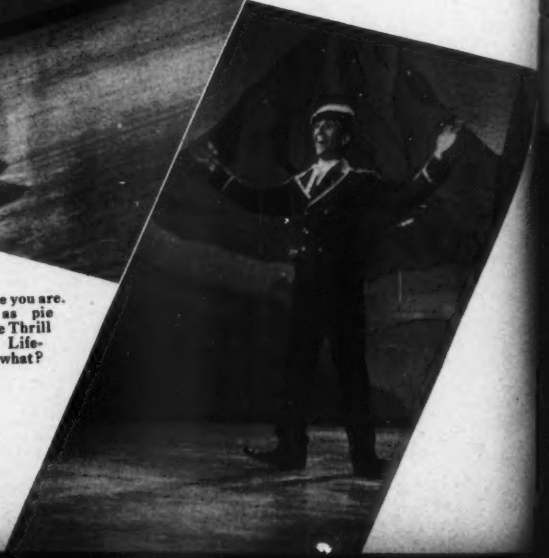
● This is easy as shooting fish—when you know how.



● Wait, what's this! Well, the best people do it, with or without runners.



● Up again and carry on. Who said you can keep a good man down.



Bringing sequence pictures to Hollywood was like "Bringing Coals to Newcastle," but the miniature camera did it!

● There you are. Easy as pie and the Thrill of a Lifetime, what?

● One candid lensman's favorite technique is this: He yells "Hey, Toots," and when a surprised subject turns around, gets a result like this one of Lola Lane, Civil War curle and all, snapped snatching a bite on location in Warner Bros. "Hollywood Hotel."

● Many a fair star, after being photographed, likes to turn the tables and do a little minicoming on her own account.



● Cameraman's wife on a picnic.—From the Metro-Goldwyn-Mayer comedy, "Candid Camera Maniacs."

● The Technicolor camera being set up for a storm scene in Warner Bros. "Gold Is Where You Find It."

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u.



Click. And lead by the all-photo movie magazine, *Screen Guide*, all fan magazines are using minicam work in increasing amounts. Rotogravure sections of Sunday newspapers also consume much of Hollywood's minicam output.

To be up to date studios have to supply this candid demand. "If movie studio A is old fashioned and doesn't turn out any real candid art," says an editor, "Well, the devil with 'em. We can get good shots from studio B." You can't give an editor a sedate, posed shot when he wants a dramatic action picture.

Writers' magazines have long taught that the only way to learn to write is to study the various types of periodicals and the style of stories they use. This same principle applies to journalistic photography—study the pictures in the publications to which you are planning to submit your photographs. Study the credit line, too, if there is one, for the name of the studio or cameraman who shot it. The stillman always works for a print that will draw the eye to a point of interest. In his work, the center of interest usually is a cinema star. They work for good, rich glossy prints, the sharper the better, and closeups of the important action.

Miniature cameras loaded with Dufaycolor and Kodachrome are filling a rising demand for color stills.

Each studio develops its own minicam film. The Paramount and Warner Bros. still departments each turn out about 300 prints a day. Paramount's 35 mm. negatives are all enlarged to 6 x 8. Only one enlargement is made from a negative. Thus every shot is exclusive. The economy of 35 mm. film makes this possible. It's another advantage of using a minicam.

At Warner Bros. one man, Samuel R. Slade, does nothing but develop and enlarge miniature film in a special laboratory. He finishes over 200 prints a day. They are enlarged to either 5 x 7 or 8 x 10. He uses a Correx tank for developing. Enlarging is done with a Leitz Focomat. Mr. Slade never uses his developer more than eight times.

As for cameras, the Leica and Contax are the most popular with still men. The new Kine Exakta is being adopted by several. Some splendid sequence shots of dance routines have been made with the Robot.

Other minicams that are used successfully for still work are the Korelle Reflex, Rolleiflex, Contaflex and Super Ikonta B. The f2, 50 mm. lens is used widely. The Zeiss Sonnar f2, 85 mm. and the Leitz Hektor f1.9, 73 mm. lenses are of special value when being used at a distance from the scene. The powerful studio lights are so strong that there is little need for an f1.5 lens.

Tom Evans was one of the first to use a minicam for movie stills. Some years ago, when the Leica began to catch attention in this country, he added one to his camera collection. For two years, in his leisure moments away from the studio, he experimented with the little camera. When the studio's publicity head saw what fine results Evans was getting he invited him to use a minicam for taking stills.

When I interviewed Evans he had just been snapping Constance Bennett at work on "Merrily We Live," at the Hal Roach studio. It was the first time a still man had ever used a minicam on one of Miss Bennett's films, but when she saw the interesting results she was highly pleased.

A still man may shoot two hundred or more snaps in a day's work, but only a small percentage of them are useable. Often they are too candid! Before being released still pictures must be inspected by the Will Hays office. Pictures that reveal too much of the body beautiful, disclose players in ungainly appearances, or that show technical secrets, such as process work, are rejected.

Some stars demand to see all their stills before they are released. All shots they dislike are destroyed. And there remain, despite this candid age, several stars who refuse to permit minicams on the set. These temperamental dears, however, are rapidly on the decline much to the relief of still men.

How To Use the New HIGH SPEED FILMS

By Luke Hammer

Characteristics of the sensationally fast films like Dupont XL Pan require new development technique. Agfa announces new rollfilms.

IS Agfa Ultra Speed film as rapid as it's cracked up to be? Complaints have been voiced that the new film is no faster than the S. S. Pan type.

How fast is Dupont XL Pan, another new high-speed emulsion? The manufacturer rates it as "Twice as fast as the well-known Dupont Superior". This would give XL Pan a speed rating of Weston 48 in daylight, and 32 by tungsten light. Can XL Pan be used at speed figures higher than these very conservative ratings?

The chief variable factors determining the speed of the new high-speed films are: (1) Choice of developer. (2) Length of development.

With all films, the sensitivity is affected by the kind of developer used; paraphenylene-diamine developers cause a loss of speed as compared to "normal energy" developers like D76, Agfa 17, etc.

Heretofore, *length of development* has not been found to affect film speed.

With the high-speed emulsions, however, new film characteristics appear. Manufacturers recommend the use of "normal energy" developers and 20 to 30 per cent longer development. To get the maximum speed of these new films, it is necessary to allow maximum development time.

● Ultra Speed Pan shot. 1/25th at f/2, Contax camera.



To ascertain a practical speed of Agfa Ultra Speed, a series of exposures were made. The first negative was exposed at a speed of 64, the rated Weston speed. Successive negatives were given less exposure, in multiples of two, until the final exposure at a rating of Weston 640! Although underexposed, the last negative gave a usable print.

This indicates that Agfa Ultra Speed can possibly be used at a speed rating as high as Weston 640 (Scheiner 37°)! Two points must be kept in mind, however.

(1) Adequate development, as described below, must be given to Ultra Speed and the other new fast films to utilize their extreme speed.

(2) The 640 rating should not be used except in an emergency or as a stunt, as it naturally yields an underexposed negative.

What, then, is the maximum *practical* speed rating at which Ultra Speed may be used? Our tests say 128 Weston or 30° Scheiner. This speed is as high in artificial light as in daylight.

This indicates that the statements regarding the sensitivity of this new film have been conservative rather than exaggerated. What then is the reason for the disappointment experienced by some users?

To get at the answer for this question it is necessary first to discard some conceptions of photographic technique which up to now have been accepted as absolute laws. Very much of the speed of the new film is obtained in the developing stage rather than in exposure.

It has long been accepted as fact that exposure determines the amount of detail in the shadows, the general density of a negative. Complementing this statement, we have always accepted that the length of development governs *only* the degree of contrast. Beginners used to try in vain to bring out shadow detail by prolonging development. This, with the former emulsions, resulted in a negative whose contrast was so great it could not be successfully printed.

Amateurs repeatedly were told that they

could not develop images in the negative which had not been impressed by the light. The most astonishing characteristic of Ultra Speed is that it seems to do this. Increased development increases shadow detail. The practical result is, for the first time, a film in which development increases the sensitivity or speed of the film!

To get maximum sensitivity out of the new high-speed films, remember two points: (1) Do not use a developer which produces a loss of speed, but use a developer of normal energy. (2) Allow full development.

The borax type of developer is very good for developing this film. Use Agfa 17 developer 20 minutes at 65°, or D-76, 16 minutes at 65°. These times are basic and may be varied according to nature of light and subject and type of negative desired.

If you are determined to make use of a paraphenylene developer, then the time of development must be considerably prolonged.

In a paraphenylene-diamine developer (which ordinarily gives negatives good contrast in twenty minutes) with ultra pan, the image at 20 minutes was flat and the contrast too low for a quality print.

Developing tests were then made on the basis of fifteen-minute intervals. At fifteen minutes the Ultra Speed film was useless; at thirty a possible print could be obtained on the hardest paper available. Forty-five minutes gave a usable image, while at one hour, the film exhibited a high sensitivity and good contrast. Excessive contrast and no increase in film speed was shown when development was continued for 1½ hours.

This indicates that paraphenylene-diamine developers—although not recommended for Ultra Speed by the manufacturers—can be successfully used provided maximum development time is given.

Prolonged development necessarily increases grain size, but it is not excessive.

Ultra Speed, in short, is a film whose possibilities have not yet been fully investigated, but already have been in excess of those made for it.

(The above may be compared with

the Agfa Ansco Corporation's recommendations for Ultra Speed: 12 to 16 minutes, according to degree of contrast desired, in Agfa 17 developer. With other formulas, Agfa recommends 20 per cent more development than for Fine Grain Superpan.—*Ed.*)

FILTER FACTORS

Agfa Ultra-Speed Pan.

Multiplying factors for Leitz and Zeiss Filters.

Leitz Filter	1	2	3	Gr.
Daylight	1.6	2	2	3
Mazda	1.4	1.4	1.6	3
Zeiss Filter	G-0	G-1	G-2	
Daylight	1.3	1.4	2	
Mazda	1.2	1.2	1.2	

NEW FILMS

The high-speed Agfa films are now available for practically all cameras whether using roll film, cut film or pack.

These include:

Agfa Ultra Speed, the 35 mm. size.

Agfa Superpan Press.

In roll film the new Superpan Press is available in the following sizes: A8 (same size as 127), B2 (same size as 120), PB20 (same size as 620) and PD16 (same size as 616). Film packs will be supplied in 6 x 9 cm., 3¼ x 4¼ inch, 9 x 12 cm. and 4 x 5 inch sizes.

This is also made in the usual cut film sizes.

The speed of Superpan Press is approximately four times that of the previous Super Sensitive types. In daylight, it would be rated as Weston 128, or Scheiner 30°.

Two stops less exposure should be used than would be given a panchromatic film of the supersensitive type. Handling and developing of the film should, of course, be done in total darkness.

Color sensitivity of the new film is of the balanced panchromatic type while the contrast is of normal brilliance. Surprising as it may seem, grain size of the new Superpan Press Roll and Pack film has not suffered by the advance in light sensitivity, and in fact is, if anything, slightly finer than previous supersensitive films.

Agfa Superpan Supreme. This will

replace Agfa Fine Grain Superpan. Speed has been increased approximately one hundred per cent, making the film twice as fast as the Superpan it replaces.

The rating probably will be Weston 48, or Scheiner 26° in daylight. For Mazda or flood lighting, Weston 32, Scheiner 24°.

Surprising as it may seem in view of this accomplishment, the grain size has been at the same time reduced to a remarkable extent, while the brilliance of the film is somewhat greater than Superpan formerly supplied. Anti-halo protection is provided by a gray underlayer and an invisible surface coating has been incorporated to minimize abrasion marks.


Super Plenachrome Press. Cut film.

The above extra-fast films now made available will bring many seemingly impossible subjects into the range of every camera owner. Certainly they will lift restrictions in lighting that have up to this time prevented the making of many unusual photographs.

Pinched for a Shot



• "He said he was going to take a shot at the Mayor, Judge. I heard him!"



Whose Perspective

To future generations many of our photographs and drawings will look as absurd as the Chinese prints which ignore perspective altogether.

A THOUSAND years after its introduction into Western art, perspective today is only half understood. We are inclined to laugh at archaic Chinese and European drawings, in which the artist failed to employ the principles of perspective. No less pityingly will future generations view some of our present day drawings!

To the photographer, perspective is a primary problem. He employs it each time he moves his camera or his subject to change a point of view. His success depends first of all on how he employs the principles of perspective.

Perspective is not only the most important factor in photography, but also the *simplest to understand*. No knowledge of mathematics, physics or optics is necessary. Perspective, in a word, is point of view. The perspective from a given point is always the same. From this point, to any eye, to any lens regardless of focal length — perspective remains the same.

With that point settled, it is easy to come to an understanding of perspective by mere accurate observation.

When miniature camera users began

- Vertical dynamic perspective. In their upward sweep, the vertical lines, toward the top of the picture, swing nearly 180 degrees and become almost horizontal. Note how the Triangle Building appears to sway backwards. This is perspective as the eye sees it.

is Wrong???

By H. C. McKay, F. R. P. S.

PHOTOGRAPHS BY THE AUTHOR

shooting up at tall buildings, conventional artists yelled, "You can't do that. Your perspective is all wrong."

They pointed out that conventional photographers with view cameras, used the "rising front" (an adjustment to permit raising of the lens) in order to keep vertical lines of buildings parallel to each other.

But it was not the minicam photographers, shooting upward and getting converging vertical lines, who were wrong.

It was the conventional photographers and draftsmen. Their limited perceptive powers—hide-bound by a conception 50 per cent Chinese—did not permit them to understand the principles of verticle perspective.

Chinese artists still disregard perspective and may show a house resting on the shoulder of a man beneath a waterfall with clouds resting on the brink. Such pictures are charming but do not carry a distinct message to us. A photograph of the scene would show the man in the foreground, a house at some distance behind him, and a waterfall yet further. The latter would bear so little resemblance to the Chinese painting that they would not be recognized as the same scene.

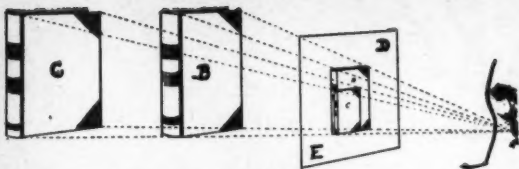
When perspective was introduced into Western art, the artist had no occasion to reproduce extremely tall objects with parallel sides. It did not enter his mind that vertical lines also should be ruled by perspective. If he bravely applied the rules of perspective to his vertical lines, square buildings became pyramids. This, seemingly, outraged his idea of propriety.

For this reason the theory of perspective as established and accepted even today by artists in general is only half right. Our photographs in which we retain vertical lines as parallel regardless of their length is as absurd as the Chinese method of ignoring perspective.

Most significant of all is the effect so often seen where crowds of people are

● When taken from the opposite side of the street, the Triangle Building appears to sway in the opposite direction. The position of the camera determines the direction of the sweep of the lines. These photographs made with a panorama camera, which has a swinging lens.



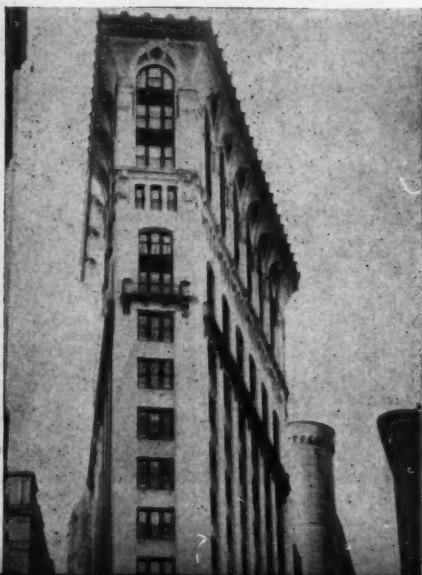


- The reason for perspective. Although books C and D are the same size, they are at different distances from the eye and subtend different angles. Hence if the images were traced upon the pane DE, book C would be represented by a smaller image than that of book B.

shown in absolutely uniform rank and in which, to our modern eyes, the people in the back row seem to be giants, those in the front row appear to be mere children and the rows in between are graduated in size. If we examine this type of old drawing carefully we will see that the people in all rows are of the same size. The apparent discrepancy exists because we are accustomed to pictures drawn in perspective while these old artists knew nothing of that phase of drawing.

Perspective is based upon the fact that the farther objects are removed from us, the smaller they appear. If we make a drawing of a straight line of telegraph poles extending into the distance, the successive poles will be successively shorter.

- How the Triangle Building shown on the previous pages looks when shot in the conventional way.



If the tops and bottoms of the poles are respectively connected by straight lines, these lines will converge. In the *accepted mathematical* type of perspective rendering, these will be straight lines and will converge as they recede into the distance.

You hear about a lens having a good or bad perspective. There's no such thing. Perspective is not one of the properties of a lens any more than it is a property of the human eye. Perspective is determined by the point of view. From a given point of view, a human eye and a lens both have the same perspective. A foreshortening effect often is remarked in objects photographed with a lens of short focal length. This foreshortening is not the result of the lens' focal length but of the

- An old Saxon drawing made before there was any understanding of perspective. Notice how much larger the figures in the rear row appear to be. About perspective, we still have ideas as old fashioned as in this ancient drawing.



lens' point of view, or the closeness of lens to subject.

At any given distance from the subject, the distortion will be identical regardless of the focal length of the lens used. A camera making a negative $1 \times 1\frac{1}{4}$ and one 8×10 may be used to photograph the same object from the same identical spot (lens centers in the same spot); if the small negative is enlarged to the proper size it will "register" with that from the larger camera—the two will be identical.

The artist usually takes liberties with perspective to alter the general effect of

his work, but such departures are slight; he adheres, broadly, to the following conventional rules:

1. All lines which lie in a plane perpendicular to the observer's line of sight are reproduced as they actually exist. That is, they do not "converge".

2. All vertical lines are reproduced as vertical.

3. All lines converge if they approach toward or recede from the observer. That is, all parallel lines in an oblique plane converge at a definite point and *this point lies upon the horizon*.

Now let us examine the above rules from a practical point of view.

1. The only plane which can be perpendicular to the observer's point of view is not a plane at all, but a sphere with the observer at its center! If a plane is assumed perpendicular to the line of view at *any instant*, that plane becomes oblique just as soon as we shift the line of sight, even slightly. So this condition can be maintained only for a point—not for a plane.

2. Vertical lines may, and should be, reproduced as vertical when we consider "vertical" to mean at a vertical right angle to the line of vision, but again as soon as we raise the line of vision from the exact horizontal, the vertical is no longer vertical but becomes oblique and therefore subject to the laws of perspective and convergence.

3. This is the most sensible rule of all. However, the vanishing point does *not* lie upon the horizon, but at infinity directly opposite the true horizon, and this applies only to horizontal lines.

Lines which trend downward converge at a point at infinite distance below the line of horizon; lines which trend upward converge at a similar point above the horizon. True verticals immediately adjacent to the observer converge to a point in the Zenith.

And finally, a factor which is not found in the usual laws of perspective: the converging lines are not straight, but curved! However, except in the immediate vicinity



● Curvilinear perspective. An artist's representation of what the eye sees. The vertical girder in the foreground as well as the building line in the background appear as curves, drawn to be mathematically correct. Note the close resemblance with the photographs on the preceding pages. Etching by G. L. Briem.

of the observer the curvature is so slight that it is often overlooked. The fact that the camera gives *straight* lines (owing to its being designed and made to do just that) is the only point in which the camera "distorts". This unsuspected distortion is responsible for the fact that photographs made with a wide angle lens do not appear natural, *even though their adherence to mathematically correct perspective can be demonstrated*.

However, let us return to a consideration of some of the simpler, every-day evidences of the actuality of perspective.

Stand in the middle of a railway track

which runs in a straight line until it disappears, and you notice that the two rails become closer and closer together and finally seem to meet at the horizon. Without going into great detail, perspective as applied in art, has come to a stage in its development where we assume there are two points on the horizon widely spaced which are called vanishing points.

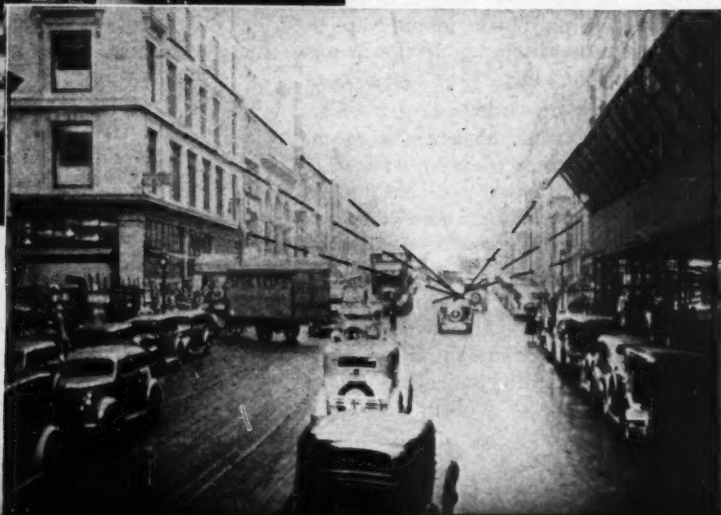
If we make a drawing of a building showing one corner and two sides, all of the lines which are actually horizontal on one side of the building will converge at the vanishing point on that same side. This is true of the roof lines, the line of window sills, the base line, and all other horizontal lines. Likewise there will be a similar conversion of all the horizontal lines of the other side of the building at the opposite vanishing point. If the two vanishing points are equally distant from the center of the horizon then the two sides of the building will be shown equally in evidence. If one side of the building is

to be shown highly foreshortened, that is, much less of it displayed than the other side, the foreshortened side of the building will have its vanishing point much nearer the center of the horizon than will the other side of the building.

So far we have dealt with only the most elementary problems of perspective, those which are given to the beginning art student. Fortunately (or unfortunately) while the facts as stated hold good up to a certain limit, there comes a time when the rules as stated will no longer govern existing circumstances. Before taking up the discussion of perspective as seen by the camera, we should take notice of one or two visual effects which are not duplicated in the camera.

To explain the factors which we wish to consider it will be necessary to make use of certain imaginary conditions. Imagine yourself standing across the street from a high wall, fifty feet high and extending a mile in each direction. If you look to the right you will see a definite convergence according to the principles of perspective as already explained. Turn in the opposite direction and you will see the same effect repeated in that direction. If

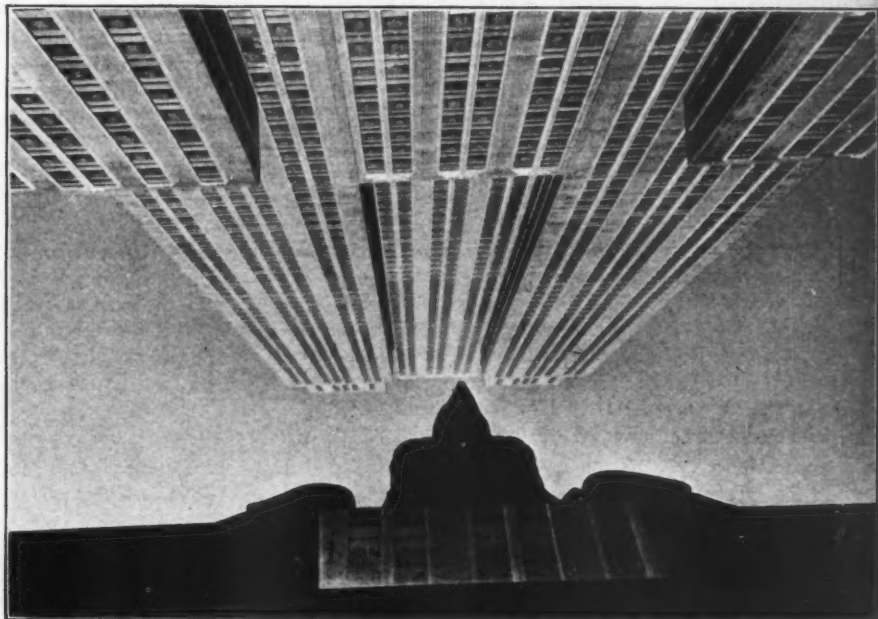
- Horizontal perspective. In the print below, the lines have been extended to the vanishing point. Note that the vanishing point is not on top of the automobile in the street. There is a hill in the street which obscures the horizon but the vanishing point lies on the horizon, projected through the hill on the street.



you were to draw a picture of this wall extending from one end to the other and if you were to draw it as the eye actually sees it you would have one end of the wall converging in one direction, the other end converging in the other. To draw this you would make the bottom of the wall almost horizontal because you are only about five feet above it, but the top of the wall to right and left would slope downward to



● Angular vertical perspective as seen by the ordinary camera. The distinct pyramidal shape produced by photographing a building from an angle and upward.



the right and to the left respectively.

Here is the point: if you make these lines straight, according to the usual rule of perspective, they would meet at an obtuse angle directly in front of your eyes. However, as you look at the top of the wall you can see distinctly that there is no angle there but that the top of the wall is horizontal and parallel to the ground. You might draw the wall with the central section horizontal and the two sides sloping, but no matter how you make the division you will still have a definite angle at the junction of the horizontal portion and the vanishing portion. Moreover, as soon as you introduce a horizontal portion you

● Vertical perspective showing how the buildings on both sides of the street converge over our heads. The peak of the eagle ornament of a building on one side of the street appears to touch the tower on the opposite side. Turn upside down to see the point of view from which this was taken.

● Vertical perspective. Even closeups show the vertical convergence of the window lines. The architectural design makes it easy to follow the linear direction. The photographs on this page all are Minicam shots and illustrate "normal" camera perspective.



begin to violate the laws of perspective as already laid down. Here we are confronted with a condition to which the usual theory of perspective cannot be made to apply. The question is, "what are you going to do?"

The answer to this question is provided by a panoramic camera of the type which makes use of a swinging lens.

This type of camera, used in making the photographs reproduced herewith, most truly represents real visual perception. When we look at a long block of buildings, we do not stare fixedly at the center of the block, but we allow the eye to follow the line of buildings, thereby building up a synthetic view obtained at many angles. The same thing is true when we look upward at a tall building. However, this type of camera *moves in only one plane*; therefore the perspective across the narrow width of the picture is as faulty as the perspective in any photograph. In short, these photographs show us "circular" perspective; while in vision we must consider the forces acting in "spherical" perspective. However, even the half-correct circular perspective will

serve to show why the conventional rules of perspective, as commonly taught, are *static*; while the newer concept is a *dynamic* one, conforming to the dynamic nature of life and living existence.

The rules of perspective as laid down conform only to a *fixed* point of view, and as soon as you move your eyes, these rules no longer apply. Inasmuch as our eyes are, normally, constantly in motion, the accepted rules of perspective are decidedly arbitrary. When we examine a photograph made with a swinging lens camera, if it is used to photograph just such an object as we have described, or even a low, flat-roofed building as little as a hundred feet long, we see that our problem is answered because *the roof line of that building is reproduced as a curve*. This is not a circular curve, however, as it is most pronounced at the spot nearest the camera. As the curve extends into the vanishing direction it becomes more and more straight until, if the building is long enough, the curve will hardly be perceptible even when examined with a straight-edge.

In view of this evidence, and in view of the problems presented by the wall we imagined we saw, we see that *perspective is not a matter of straight lines but of curves*. The camera, because it has a lens artificially corrected to give straight lines to the margins of the plate, and because the plate is a flat surface instead of a spherical one (as is the inside of the eyeball) the camera works according to the rules of plane perspective, but this is probably incorrect.

If you look fixedly at some object so located that a tall building is barely at the edge of your field of vision, you will see that the edges of this building appear to be somewhat curved. If, in fixing your attention on this building, you move your eyes so

● The 160° lens accomplishes in one shot what a panorama camera does by means of successive exposures on a single strip of film.

BLACK STAR





• Circular perspective
as seen by a Robin Hill
160° camera, which employs
what may be termed an extreme
“wide angle” lens of the type used for submarine
telescopes.

they point directly upon the building this appearance will be lost. In other words, human vision is not rectilinear! However, if we make a photograph which exhibits these same curves at the edge of the field it is not satisfactory for two reasons. First, when we look directly at an object it lies in the center of our field of vision where it is rectilinear, and when we look directly at the edge of the picture, the curved lines appear to be distorted. Second, we have become so accustomed to the convention of straight lines in pictures, that we do not mentally accept a picture which shows

as curved, lines which we know to be straight in the original.

We now come to a factor in the consideration of perspective of vital interest to the miniature camera user. This is a matter of vertical perspective.

Not so many years ago the average photographer was rarely called upon to photograph anything taller than a tree or perhaps a three or four-story building. Let us say arbitrarily that the maximum height of objects to be photographed is a hundred feet. We are not conscious of the effect of perspective in real life when

the distance of an object is a hundred feet or less, so we have not noticed the effect of perspective under these conditions just stated. However, in making the photographs, the camera would detect vertical perspective even in a structure twenty or thirty feet high. As a result one of the first adjustments placed on cameras was the "rising front" to permit the lens to be raised in relation to the film so that a fairly tall object could be centered on the plate without pointing the camera upwards. Thus the vertical lines were preserved as vertical and parallel.

With miniature cameras which do not have this adjustment, it has become common practice to shoot buildings, even though of fifty stories or more in height, by merely pointing the camera upwards. Naturally the result shows a pyramid shape to the building. But this is just as natural and just as correct as the photograph which shows the sides of a street of the tracks of a railroad approaching each other as they recede in the distance.

Observe a skyscraper and you will notice the vanishing effect because of the tremendous height of the building. There is no reason to believe that the old convention of keeping vertical lines vertical has any foundation in fact; as a matter of truth we should assume that parallel lines will appear to converge as they recede from the observer regardless of the direction in which they recede. There is no reason why vertical lines should not converge just as readily according to the same optical laws as those which lie upon the surface of the earth.

This factor of perspective is full of room for endless argument. We may say

that we prefer the conventional treatment (the vertical lines) because it looks better to us. This reduces the matter to one of personal preference. We are forced to admit, however, that if we stand in a street lined with skyscrapers, these skyscrapers will apparently tend to meet over our head. They will not only lean outward but will curve in a definite arch to approach each other far above our heads.

In proof of this we might cite photographs made with a panoramic camera turned sideways so that its lens swings in a vertical plane rather than in a horizontal one. If a picture is made with a camera of this type from a point of view opposite the central portion of a skyscraper, then that skyscraper will have both its base and top smaller than the portion directly opposite the camera. This enlargement and diminution moreover will not be rectilinear but will be curvilinear. In other words, the building will bulge out at the point directly opposite the lens, and there is every reason to accept the fact that this is the correct reproduction of that building.

Photographs made with such a camera are shown here to illustrate the appearance of curvilinear perspective. It was evolved not by a photographer, but by an artist, G. L. Briem, who prepared a series of etchings made according to this system of perspective. These etchings do not *appear* to be normal, in fact they appear to be ultra-modernistic, and the first impression is that they are the work of a man

- Horizontal dynamic perspective. The curves in horizontal lines explain why we do not see angles where the two vanishing lines meet in a single surface. The curve becomes less and less pronounced until at a finite distance it has become practically a straight line moving toward the vanishing point.



who was venturing into a radical realm of art.

The truth of the matter is that the etchings mentioned were made by this artist in a most workmanlike manner, in which every dimension, every direction, every line in the etching was based upon direct visual measurement. In checking these measurements, it has been found that they are absolutely correct and that these etchings do represent exactly in every detail the visual image.

An interesting variation is the "radical" perspective exhibited by the Robin Hill camera, in which a full 360° circle is reproduced as a circular print on the plane of the paper. These photographs also show curved perspective as perfectly circular in form. If these are acceptable, then why do the etchings not appear natural?

The answer lies in that overzealous policeman who rules our brain. One of the most troublesome factors in color photography is that people see color as they know it to be and not as it actually appears. For example if an orange is illuminated by a green or blue light in which there is absolutely no red, people will state that they see, and will see, an orange color although it is absolutely impossible for orange color to exist under the circumstances. This phase of mental interference can be demonstrated.

The same is true of form. When we try to tell our mind that the vertical line we "see" not only is not vertical but also is curved, then the mind rebels and refuses to see the line as it exists.

So we arrive finally at a conclusion regarding the matter of perspective, or rather a dual conclusion.

Because the camera lens is mathematically more perfectly correct than the eye, it gives an interpretation of perspective which is mechanically perfect. A photograph may show violent perspective but never untrue perspective. In short if a photograph made by contact from a negative is examined at a distance equivalent to the focal length of the lens which was



● A study in compound perspective. Here we have the curve of the vanishing line strongly shown as it follows the projection at the lower part of the building. Yet this is just how we would see this building if we should stand beside it, looking first upward then following the roof line to the end of the street.
Panorama Camera

used in making it, the perspective will be exactly that seen by the eye in the same position as the camera lens.

When the negative is enlarged, the "normal" viewing distance is increased until it is the same as the focal length of a lens necessary to produce such a sized im-

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Stereo for Closeups

By E. J. Roy

Everything from the Grand Canyon to a backyard anthill is within the province of the stereo camera

YOU can make your first stereo picture without any special equipment—except a stereo viewer which you will want to look at your results—and a viewer may be purchased for less than a dollar.

A stereo camera has two lenses and takes two pictures at one time, but for still subjects, any ordinary camera can be used.

The technique of stereo making as described here last month, is to first make an exposure and then make a second exposure after the camera has been moved in a horizontal plane a distance of about 64 millimeters ($2\frac{1}{2}$ inches). This distance corresponds to the separation of the eyes. The two pictures then are made as though one were taken with one eye

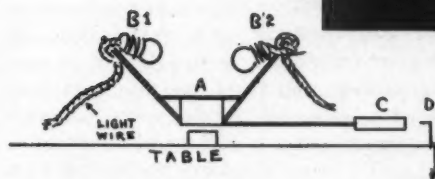
and the second made with the other eye.

The simplest method in which this may be done is to provide a short bar of wood or metal with a hole in the center for the tripod screw. Holes are drilled on either side to take two tripod screws. The center of each hole, measured from the center of the center hole will be 32 millimeters. In making the pair of stereo shots the bar is firmly fastened to the tripod using the central hole. The first exposure is made with the camera screwed in one of the side holes. The exposure is made, the film wound to the next exposure and the camera is moved to the other side. The second exposure is made. A minimum of time should elapse between the two exposures.

● Try this in your stereoscope to see a hairy monster revealed as if by magic in relief and solidity.



- Photograph and diagram show how the tiny subject is placed on a revolving stand. Two exposures of the same subject are taken, the stand being revolved from 3 to 5 degrees between exposures. Illumination is furnished by two 4-volt flashlight bulbs plugged into the light circuit through a transformer. Their closeness makes the bulbs as effective as floods would be at the necessary three to four feet.



For making stereos of small objects, instead of moving the camera, the subject itself may be moved.

Previous articles* have told how to take closeups of garden insects or how to photograph through a microscope. To do it stereoscopically, merely place the subject or group upon a suitable support, a flat block or even a book will do; mount the camera as solidly as possible—it must not move between exposures; use a table or desk lamp for illumination if nothing better is at hand. Now, make one exposure, revolve the book so that a corner will move about an inch, wind the film and then make the other exposure.

You now have a stereo pair of negatives which are to be printed on glossy paper. But just wait until you see those prints with the stereoscope, no matter how drab or uninteresting the chosen subject may be, it will spring to life as you view it through the stereoscopic lenses.

Get an old fashioned stereoscope; one may be bought for a dollar or so, but first, investigate the attic; you may be rewarded with a usable instrument of days gone by. Place a suitable sheet of cardboard into the holder and set the prints side by

side upon the cardboard. Now, observing through the instrument, shift them about slightly until the images merge. You may discover that your subject is "inside out." Reverse them, placing the left on the right and the right on the left. Presto! As if by magic, before you stands a hairy monster in relief and solidity, every line and plane being revealed in its true relation. No doubt here about shape or contour; you can see the insertion of each hair and note the ocular turret with the battery of eyes.

Macro stereo photography provides an entirely new approach to the study of insects and other small objects. The method herein described is basically new and its possibilities legion. The writer has seen people, especially ladies, actually shudder as they for the first time viewed some of nature's creatures. It seems almost ridiculous that the simple expedient of making two slightly different views could bring about such realism, but that is the secret of stereoscopy.

Any camera which can be adapted to the photography of small subjects may, of course, be used. Now, a little about technique. If the subject is placed upon a small turntable the degree of rotation may be more easily duplicated, 3 to 5 degrees is correct for most subjects. The camera should be mounted to a flat, solid support so that the film may be transported without shifting the camera.

It is easy to make a turntable like the
(Page 81, please)

*"Trapping Miniature Monsters." October MINICAM.
"Backyard Dinosaurs." January MINICAM.

Your Camera As a Detective

By R. D. V. Johnson

MORE deadly than any pistol is the camera in the hands of the law-enforcement official.

With but one accessory, any photographer can launch into at least one fascinating field of the criminologist—that of handwriting analysis.

Every line ever written—or even type-written—is indelibly stamped with clues of its origin. The camera's see-all eye laughs at concealment attempts.

How does a handwriting expert make decisions and present his evidence? Does he look at a writing sample and immediately proclaim the accused's guilt or innocence? Newspaper reports may give that impression, but a man's life and reputation, fortunately, seldom hangs upon such a slender thread.

Working with his No. 1 tool—a camera—the handwriting expert presents photomicrographs of questioned writing. The case may involve a ransom note, a forged check, or an altered will. The writing, after being enlarged photographically, is subjected to accurate measurements. For convenience in presentation to a jury, letters originally an eighth of an inch high may be enlarged to three feet or more.

If you were called upon to definitely identify handwriting, how would you proceed? What difference would you expect to find?

Writing, whether good or bad, legible or illegible, is usually performed under conditions as nearly uniform as the writer

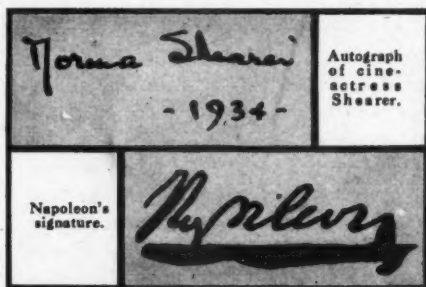
It can be used as a powerful weapon for criminal investigations, scientific graphology, or just to amaze your friends. Start by photographing and studying samples of your own handwriting as described in this article.

can make them. He automatically places the paper before him at a certain angle, he grasps the pen or pencil in the same way and writes through the use of a very complex coordination of a large number of muscles. These are the

factors which give individuality to handwriting.

Angle of Writing

The angle at which the paper is placed upon the table before a writer combined with the general direction in which the hand moves across the sheet of paper and the muscular motions of his arm and fingers in writing will determine the average angle of the letters to the direction of writing. This angle is not fixed, but can be averaged from several specimens of handwriting from one individual. The specimens will so closely resemble each other that the degree of identity may be



• Autographs of celebrities furnish interesting material for study with your camera.

accepted as a factor in the identification of the handwriting itself.

Letter Formation

In all handwriting there is a characteristic formation of letters. Writing may be large or small, or otherwise varied to affect general appearance, but when individual letters are enlarged to 12 inches or more, all of these supposedly varied letters will reveal the characteristic factors which identify personalities. Anyone trying deliberately to disguise his handwriting can succeed in changing a few of the more obvious characteristics of his writing, but not the minute, individual characteristics that eventually will give him away.

The professional handwriting expert uses a somewhat imposing array of instrumental aids. The average minicam owner, however, has sufficient equipment to start an elementary handwriting investigation.

The only special requirement is a camera which will focus close enough to reproduce an image on the negative equal in size to the original object. A folding type camera with a double-extension bellows will do the trick. Or you can use one of the devices described on page 32 in MINICAM for January.

The professional way to adapt a minicam to this closeup work is by one of the following devices: (1) A copying attachment or lens extension tube. For many cameras, a reproduction stand may be purchased, and this makes it a simple matter to copy writing in the natural size or larger. (2) An ordinary microscope such as is used in schools or laboratories. This should be fitted with a metal collar at the top to accommodate the miniature camera.

The first step is the production of a photograph of the writing specimen to be studied. This photograph should show the writing about ten times its original size. Next, the enlarged specimens are measured with rulers and protractors.

The handwriting expert has a number of scales which are engraved upon glass, by means of which he measures the origi-

● Paper ash photographed by infra-red. The words "carbon ink on ruled paper" can be deciphered. "Pan" film does fairly well but infra-red is better.

● Steel blade erasure.

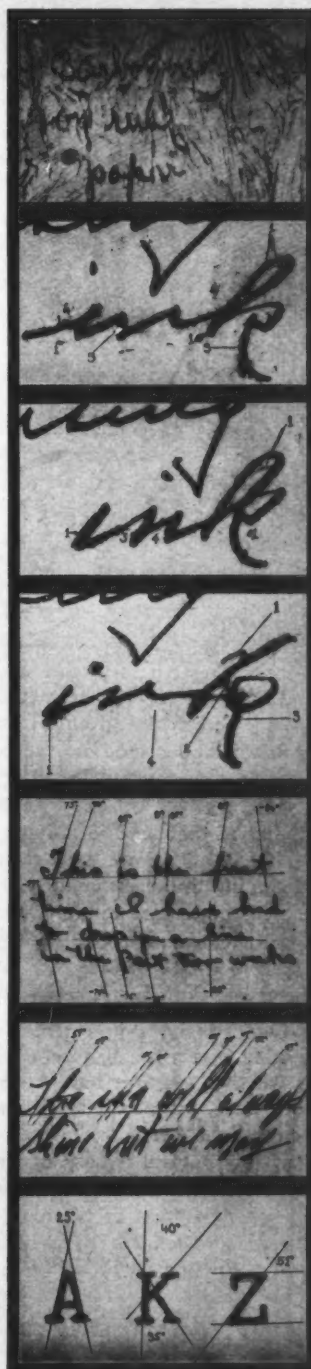
● Spun glass erasure.

● Rubber eraser: (1) Remains of original writing, hardly noticeable in the original. (2) Paper abrasion, heavy. (3) Typical seepage of ink into abraded surface. (4) Surface abrasion of paper. These numbers are the same for all three eraser samples.

● Note the variable angle, also the straight terminals at the end of words and the incomplete "S" at the end of words, and the similar "P."

● Note persistence of angle; "L" is disconnected at lower stroke; disconnected "U" and "I". The small "N" is most characteristic, as are the flourishes as in "the" and "but."

● Characteristic measurements of typewriter faces.



nal handwriting. These instruments are delicate and costly. Not stock items, they are made up to order. The amateur handwriting investigator, however, measuring not the original handwriting but ten times enlargements, may use an ordinary, inexpensive celluloid scale and protractor obtainable from any stationery or school supply store. Such instruments are accurate enough and will enable the amateur to conduct some very interesting original investigations.

The accompanying illustrations show some of the improvised measurements. However, the measurements of comparative dimensions, angles, and individualities in the handwriting does not constitute the limits of the photographic investigation of "questioned documents" by any means.

Before we go into the consideration of other factors, however, we should take time to consider that typewriting is just as individual and just as easily identified as handwriting. Not only can the expert in handwriting tell the name and model of the machine used in typewriting, but, if he has access to a group of machines including the one used, he can pick out the particular machine used.

The method of examination is quite similar to that used in handwriting but it is, if anything, even more definite. Some of the illustrations presented here indicate the methods used in the examination of typewriter samples.

Erasures

One of the things which the handwriting expert is called upon to determine is whether erasures have been made. If they have, his second task is to determine whether these erasures have been made for perfectly natural reasons or whether they have been made to alter the nature of a document so that its meaning is different from that intended by the writer. If the latter is found to be the case, the third problem is to discover the original text which was erased and then to discover information leading to the identity of the individual who made the alterations.

This seems like a sensational list of demands, but many of these things are so easily determined with the aid of photography that they lie well within the range of the average amateur.

The easiest, and most easily discovered erasure is that in which a knife blade was used, an emery-filled rubber eraser, a spun glass brush or other mechanical erasure means. These methods accomplish the erasure by tearing away fibres of the surface of the paper, the fibres which bear the impression of the ink. Obviously the destruction of the fibre texture of the surface is easily discernable under a microscope or in a ten diameter enlargement from a negative the same size as the original writing.

Usually, erasure is followed by fresh writing across the empty space. If an alteration is made carefully, no sign of it may be discernable on casual inspection. A very slight enlargement, however, is sufficient to show that the ink has not remained within the line of the pen stroke but now seeps out along the edges just like writing in ink spreads on soft, pencil paper. Here again the ten-times enlargement is quite sufficient to show the characteristic seeping of the ink.

When the surface of the paper does not reveal any disruption of its fibres, the existence of any mechanical erasure can be detected by holding the paper at such an angle that light is reflected from it. The smooth surface of the original paper then will reflect the light with a definite glossy sheen, but any erasures, even those of pencil writing, with a soft eraser will show definitely darker because the rubber has destroyed the smooth sheen of the paper surface. This can be demonstrated by rubbing spots on a sheet of ordinarily good quality paper with a rubber eraser and then examining under the reflection of light with the paper held at the reflection angle which produces the highest amount of glaze or sheen.

Ink erasures are often made by means of so-called chemical erasers. These fluids, which are sold in most stationery stores,

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● "Dawn on the River Polochic." Early morning haze gives a beautiful soft focus effect. Contax, $f/1.5$, wide open at $1/100$ th second.

A Woman Explores

By Ruth Frank

When an adventurous lens-woman heard that women were barred from a scientific expedition into the Guatemalan jungles, what did she do?

Here's the answer.

IN Guatemala City, after two months of snapshooting, I was preparing—lackadaisically—to return home when I heard of an anthropological expedition about to explore the paradisaical valleys of the Rio Polochic and Rio Dolce! And the expedition was headed by the handsome anthropologist, Franz Blom—a confirmed misogynist, I was told—a woman hater.

That settled it. The lure of the jungle and the Rio Dolce perhaps I could resist

—but a confirmed misogynist—never. I told him so when we met (by accident?) at the home of a mutual friend on the Calle del Quetzal.

I spoke of my two months in Guatemala and two thousand negatives; pic-

● Lenswoman Ruth Frank with two of her fellow explorers on the river boat in the jungles of Guatemala.



tures of volcanoes and lakes, of religious processions and dances, of candle-lit interiors, of churches and sunlit exteriors, of market places in the highlands towns, of weaving and dyeing and bathing, of fourth century ruins and President Ubico's modern army and all the aspects of Guatemala life in the great Indian highlands.

I suspected there was yet more to be photographed. I had heard of the "sister" rivers cutting through the jungle in the hot northern lowlands; the Quetzal, native bird of paradise; wild orchids and savage animal life. Into this perfect pictorial paradise and through its dangers, the misogynist-anthropologist would take me, I thought, hopefully.

Yes, he said, he was to go up the "sister" rivers to gather material for the University. But as to taking me—or anyone else—the answer was "NO."

He spoke of dangers, but I—with the confidence of ignorance, scoffed at danger.

That afternoon I met it face to face. Going confidently—alone—to Antigua, the ancient city, I said to the taxi driver, "What do all these crows want? The sky was black with giant red-beaked buzzards wheeling over the road. They flew ahead and around a curve the road was blocked by a mob of natives. I got out, unslinging my camera. The corpse of a native was being rolled out of the ditch onto the side of the road. He had been killed, presumably the night before, by a hit and run driver and left to rot in the ditch, hidden to all but the buzzards.

One glance was enough for me. Some of the natives, usually docile as sheep, were getting ugly. One Indian woman kept slumping to the ground while her friends kept picking her up—she wasn't fainting but was intoxicated with chiché, the vile native beer made of fermented maize. I lost interest in picture-taking, in Indian life, in Antigua, the ancient captial. Back to the city I went, back to my hotel.

The next day, this premonition of danger slipped back into the past, as things

do in the tropics, and I again resolved nothing would prevent me from satisfying my desire to see the valley of the Rio Dolce.

But Mr. Blom, the misogynist-anthropologist had ideas too.

He had a photographer, he explained, a Mr. Reilly, to take movies. Then there was Dan, his librarian. The three men were all there was in the party. No women. Above all, no women photographers. Just three men.

Three days later, the four of us set out for Coban in a 1916 Buick with the tires taken off so it could run on the



● Child of the jungle. Tropical morning light, low in actinic value necessitated maximum possible exposure, f/1.5 at 1/25th second.

railroad tracks. We got in it at six in the morning, and went along the railroad tracks.

Our motorman was careful to go slowly so we could shoot pictures as we drove. Riding on railroad tracks is fairly smooth, except around turns. Reilly ground his movie camera, and Dan took interminable notes in a little black notebook. Mr. Blom guided this first part of the expedition from the front seat and



• Anthropologist Blom and photographer Ruth Frank with the auto on railroad wheels on which they started the three man, one woman expedition into the Guatemalan jungles.

I hopped all over the back seat! I aimed my Contax at Indians carrying great burdens as they trudged along the road, at the big black Zapolata birds flying up from the barancas, at the drooping jacaranda trees burning deep violet under the rising sun, at the volcano Agua which seemed to dance in the veil of fog as we rounded corners and came on it again and again.

It was tricky business shooting with three people and baggage in the back seat, with the elderly car jiggling on the tracks, and particularly with the light constantly changing as the sun rose and the fog lifted. Weston readings counted for little, because the objects focused on flew past before they could be properly read, and the light changed while you looked at it. I shot at 1/200, because of the camera's motion, and very early in the morning I had my lens wide open, f/1.5. However, we were over six thousand feet up, where the air was clear. Soon I was able to stop down the shutter a good deal.

The track ended at Ranchos. We took no pictures at Ranchos. There's nothing at Ranchos but bananas, and I'd already taken pictures of bananas in every position. Besides, there were more important things to do, like getting food and drink and sleep, and learning that a lady mem-

ber of an expedition does just what the boss says.

A station wagon of sorts sent from Coban met us at Ranchos, and we had a day's drive to Coban. Photographing was impossible while driving, and that was torture, because there was so much to take. Only when I shrieked my loudest and frightened the driver into stopping



• On the road to market. 1/100th at f/8. Jungle kids ape their grown ups.

was I able to climb out and shoot something that simply couldn't be missed. It was that day that the male part of the expedition began to regret taking along the female part.

My most difficult shot that day, and the one I was most anxious to get, was of a true Mayan shrine by the side of the road at the highest point of the pass in the mountains.

At Coban, a highland "coffee" town, there were animal-eyed natives and prosperous coffee planters. We spent several days in the villages and then I ventured a question about supplies. The boss knew that there would be a rest house down the river where we would stop that night. Food? Well, I was the female of the party. Domestic details were up to me.

I commandeered Dah to carry a market basket and extra films for me, because I knew how a market place affects me and my Contax. I never have enough film.

A woman photographer, whose cloth-

ing hasn't a man's pockets, is at a disadvantage on a long trip when it is necessary to carry a stock of film and accessories, and keep hands free for shooting. My system isn't really carrying—it is rather a system of hanging, not attractive but useful. My Contax in its everready case, of course, hangs from my neck. Also around my neck is a small leather case with a zipper in which I kept sunshade and filter. In another case, likewise hung like a necklace a Weston meter. When anything gets too heavy, I would shift it to the Big Bag slung around my waist.

The Big Bag was actually an East Indian feed bag. Through its mouth, across which I had sewn a firm zipper closing, went extra film, lens tissue (which is important when you are taking pictures where dust blows and rain smears your lens), exposed film, notebook, etc. It always bulged, but the zipper held. And I really didn't have to carry anything much!

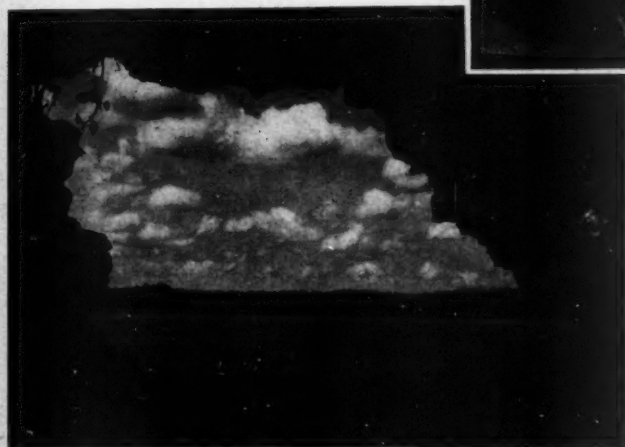
The difficulty of market place pictures is first to catch a single figure or group of figures apart from the general confusion of people milling about buying and selling; second, to catch your subject before he spots the camera, and third, to get light, because the vendors, to get out of the hot sun, invariably huddle in the deepest shadows. Also, it's

difficult to get far enough away from your subject without stepping on a baby or a trussed pig or into a bowl of cooking chile. The accompanying picture shows a bad example of a market place shot. The mother and child are not sufficiently detached from the rest of the figures, they have spotted the camera, they are in deep shadow and they are not at the proper distance.

But the woman in the photograph sold fine fruit. I bought a dozen alligator pears, seven different kinds of bananas (plantains), two pineapples, great sweet limes the size of grapefruit, granadinos, which are a little like pomegranates, several sticks of sugar cane, and then there was no more room in the tremendous basket. Out of the original



● By suddenly facing the camera, this native Guatemalan squatting in the market place, spoiled what might have been an interesting composition—but she sold fine fruit. A basketful of alligator pears, bananas and limes cost less than a dime.



● Taken from within a ruined pirate lair overlooking Lake Isabella. The thick, low-hanging clouds, characteristic of Guatemala, often necessitate long exposures, even at mid-day. This is because they are laden with volcanic dust.

twenty cents with which I went to market I still had three cents left, so I bought an armful of calla-lillies and about fifty carnations and handed them to Dan, keeping my hands free for pictures on the way home.

At the village of Tawapu we found our first Indians of the real tropics. Unlike the vigorous, healthy highlanders these Indians were slow-moving and langorous, most of them ill of malaria and hook-worm. There was a complete lack of vitality in their village life. The terrific heat made much movement impossible.

At the tropical village of Tucuri it was market day. Women held large banana leaves over their heads for shade. Most of them had big goitres, and their eyes were yellowed with malaria. Their costumes were stunning, with wide, red skirts, brilliantly embroidered and woven blouses, and tremendous coils of turkey-red material wound around their heads.

The glare of the sizzling noon sun was terrific; you could really see the heat waves move, and it seemed impossible not to get the glare into the pictures. I used a filter, stopped my lens down as far as I could, and shot at 1/100—and for once didn't shoot very many pictures. My hands were so sticky with heat that it was difficult to manipulate the camera.

At nightfall we reached Panzos which was the end of the line and the beginning

of the river journey.

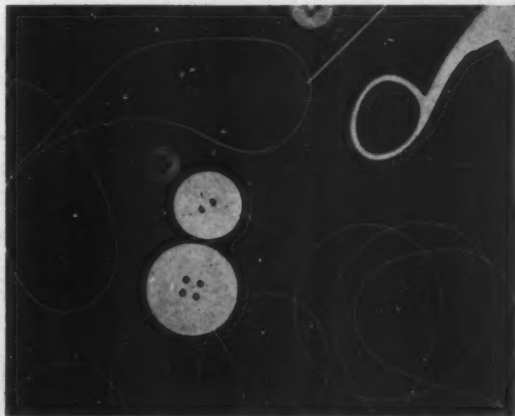
That night we spent in a "rest" house—some cubby hole rooms which you couldn't stay in for more than a minute at a time, and screened-in verandah. We did our resting for the night on the verandah. The rest house offered only "rest"—no food. And one didn't dare open the screen door for fear of the terrible malaria carrying mosquitoes which buzzed all night.

We ate some of the fruit. We mopped ourselves off. We settled on the wooden floor where the heat we imagined, would be less. It wasn't. We listened to the mosquitoes and ate all our limes to try and quench our dreadful thirst.

At four in the morning it was slightly cooler, and still dark. We put our legs in the sleeves of our sweaters to protect them from the mosquitoes which were still dangerous in the darkness. Then we stumbled down to the river and into the tiny, rocky launch waiting there for us. A native boatman helped us on board and we felt our way along the deck to the prow of the launch. The water was quite still, and the moon setting behind the banks made silver streaks on the river. We huddled in our sweaters, slapping off mosquitoes, and waiting for the little launch to start. Gasoline fumes told us it had. It shook itself like a dog coming out of water and we were on our way down the Rio Polochic and home.

Darkroom Designs

Gadgets are placed on sensitized paper to yield an interesting pattern through their shape, shadow and transparency. Light is turned on long enough to produce the desired tone differences, then the paper is developed and fixed as any other print. The design should be tried first on non-sensitive paper placed on a sheet of glass. The paper should be semi-transparent. When looked at from below it should show the shape of the objects and their shadows clearly. Then contact or enlarging paper is substituted under the safe-light and the exposure made.



MINICAM MONTHLY CONTEST AWARDS

Short-Short Story

\$15 Won by Howard L. Hoover,
Niagara Falls, N. Y.



1. Reaching for the jam.



2. "This is swell stuff."

3. Caught in the act.



4. The wages of sin.

MINICAM'S NEW \$175.00 CONTEST FOR WATER PICTURES

SUMMER months mean water pictures. For ideas of what to shoot, see the articles "Fun in the Rain," and "Shoot the Sparkle" in this issue of MINICAM.

But any photograph which includes water will be acceptable.

Thus, you may portray a river bursting its banks or a giant closeup of a single drop of water. An ocean gale—or the perspiration on a forehead; a fish flashing out of the sea—or a beautiful bathing girl.

Entries will be judged on their merit as good pictures. For the best "Water" picture, MINICAM will pay \$100 in cash. In addition, a second prize of \$50 and a third prize of \$25 will be awarded.

Aim for unusual, dramatic or attention-getting compositions, the kind that make people stop and look.

RULES

1. Print size. Must be 4 x 5 inches or larger. 8 x 10 Glossies preferred. It is not necessary to mount prints.
2. As many pictures as desired may be submitted provided each is complete in itself.
3. It is not necessary to do your own developing or enlarging. Any camera, film, etc. may be used.
4. Enclose adequate postage for the return of prints. MINICAM cannot assume responsibility for pictures lost.
5. The decision of MINICAM'S judges shall be final.
6. It is not necessary to include model releases. If human subjects are included, however, the makers of the winning prints will be asked to furnish model releases signed by their subjects.
7. Prize winning prints shall become the exclusive property of MINICAM.

8. Address "Water Contest," MINICAM MAGAZINE, 22 East 12th St., Cincinnati, Ohio.

9. Contest closes July 1.

10. On the back of each print or on an attached sheet write (1) Your full name and address. (2) A description of how picture was taken, problems solved, etc.



\$25
WEDDING CONTEST
 Won by J. C. Weller,
 Cleveland, Ohio



"IDEAS ILLUSTRATED"
\$10 CONTEST
 By George A. Thompson,
 New York City



(Above)
 "A sock in the
 teeth."

"All wrapped up
 in his
 newspaper."
 (Right.)



● The center wedding picture above, selected from many "rice-throwing" pictures submitted, was submitted by J. L. Warner, Baltimore, Md. Selected to fill in with the prize-winning wedding picture group, it won a special award of \$5. Taken at f5.6, 1/50th second, the shutter speed was slow enough to record the movement of the rice flying through the air. An interesting example of correct speed as described in the article "What Price Shutter Speed" in this issue of MINICAM.

A Minicam Movie

By Hadden Hall, Jr.

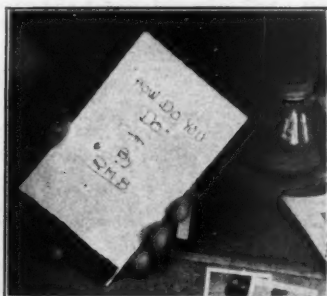
ILLUSTRATIONS BY THE AUTHOR

Here's how to make a ruffle-book that will make your snapshots dance!

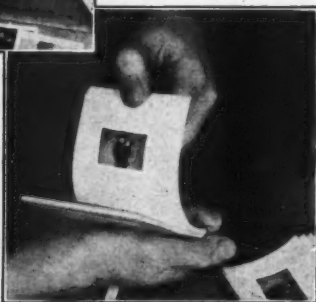
THE sentiment connected with this story concerns purely economic reasons. The writer's mother for some years has been separated from him by some 2,200 miles. Only his minicam has lessened this isolation via an endless flow of informal pictures of himself and his little family. How much more acceptable and thrilling correspondence can be with a few simple strip prints thrown in to add a living note! What a pity that separated families do not make more use of the minicam in establishing more intimate contacts. Sister sends a print of her new evening gown, mother sends her daughter-in-law a tiny print of a new chair in the living room or the refinished kitchen while young brother insists on including a print of his first appearance in long pants. What gay "family parties" may be had by mail and by the aid of the faithful, ever-ready little camera with its low-cost output.

The writer had often thought of sending his mother moving pictures of himself and the little grandson she has never seen. It was a nice idea, but the family budget could not stand the strain of a camera and two projectors. It was a happy thought, however, for out of it came a brand new idea: movies with a minicam.

Long years ago, boys who had saved cigarette coupons and accumulated a specified number, were given a ruffle book



• The completed book with tape binding pasted in place. This gives the book a finished appearance.



• This is the way the living picture book operates. It is merely ruffled like a deck of cards. Lo and behold, the object lives and moves. Anybody can do it and everybody will enjoy it.

of photographic prints made from movie strips and arranged progressively so that when the book was manipulated a racing automobile would flash by or a clown would do a back-flip. Of course, the pictures were printed from plates to avoid the expense of individual printing photographically. Here was the inspiration! Was not the minicam versatile and economic enough in operation to do this trick at home? A little thought on the subject proved that it was and, as a result, the writer wrote a new and thrilling chapter in his photographic book of memories. A few days later, the mother in question received a moving picture of her son where-in he threw a kiss at her. The trick was easily done and cost less than 40 cents.

In another instance, the writer sent a very intimate friend a movie that recorded an old fashioned nose thumbing. Then

A MINICAM
MOVIE READY
FOR THE FIRST
SHOWING.

the Mrs. got the brilliant idea of sending her college roommate a few movies of herself and, all in all, "one man's family" has had a lot of fun with the idea.

The best camera for the purpose probably is a 35 mm. with 36 exposures and which can be manipulated rapidly for successive shots.

Now for the "dope." At the outset, it may be said that the subject should be adult and fairly patient although with an expert operator 35 "takes" may be put through in three to four minutes. The movements recorded should be fairly simple. A lady may throw a kiss, a man may light a smoke, thumb his nose or take a bow. After the first picture is taken, the subject moves just a trifle for the second, a trifle more for the third and so on until 35 or more pictures have been taken. On paper, this may sound like quite a chore but in practice it is surprisingly simple and easy. The newest beginner can try it with every assurance of success.

The picture may be rehearsed before filming. It is all a question of timing and coordination. Each new movement should be counted and care should be taken that the movements are not too great. Otherwise, a jumpy and unconvincing picture will result. In short, the poser should

not try to do too much. Of course, longer subjects may be



● Number your pictures. See that each picture on the strips is numbered in the proper order. This will prevent the sad experience of getting a book bound only to find that some pictures are out of place.



● Placing the pictures on the bristol board. A cardboard template with an opening the size of the photograph should be used. If a pencil is used to mark a dot in each corner of the hole in the opening, it will be possible to locate each picture with precision.



● A marking template to help with binding. This piece of tin is cut the same size as the pieces of bristol board used for mounts. Four holes are pierced through this and the holes through the bristol are punched with a darning needle.



● The ruffle booklets should be tightly bound. Wire is threaded through the holes, pulled up tightly and twisted with pliers.

However, if an expert is "shooting", this need not take over a minute.

If the subject is seated or leaning against a wall, he will be in a good position to hold his pose without undue strain on the control muscles. In one instance, the writer took 97 shots on two re-loadings and the result was perfect. Not the slightest hitch was observable between rolls. There is little or no reason why the first movie taken can not be a great success. What's more, when the minicamist sees how easily it may be done and how good a result may be had, he will not be satisfied with a single picture. He will want more.

The details are very simple. Strip prints are made from the negatives by contact and each print is numbered so as to insure each print taking its correct position in the sequence.

Unless double weight printing paper is employed, it will be necessary to mount each tiny print on a piece of thin bristol board. The latter will allow the pictures to pass with the speed and snap necessary to produce a good illusion. Each print must be carefully positioned to avoid

jumping when the picture is shown. The use of a template (Page 86, please)

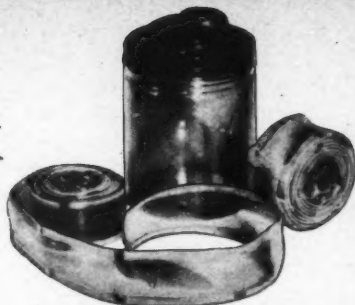


● Have your subject move a few inches for each exposure. When these snapshots are "flipped" past the eye in the ruffle book, it will show a man lifting a field glass to his eyes.

taken with the large capacity cameras or even with the camera of small capacity but, in the latter case, the subject will have to hold his last pose until the camera is re-loaded.

Build Your Developing Tank

By Victor H. Wasson



• The completed developing tank. It is made of a cold cream jar painted black and holds two reels of film at one time. The size of the jar depends on the size film you use.

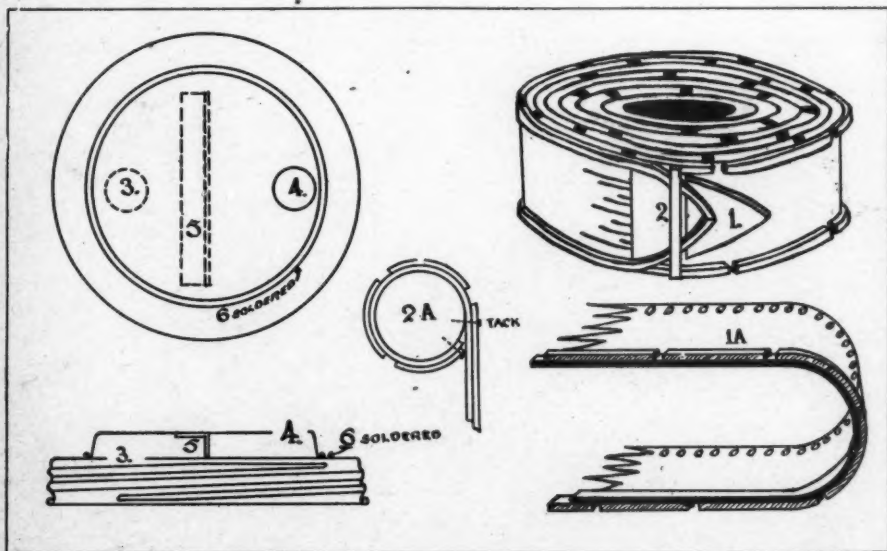
IF all amateurs approach the development of the first few rolls of negative with as much trepidation and fear of the unknown as I did, this efficient and surprisingly simple piece of darkroom equipment should prove a shining light in a wilderness of reels, trays, times, temperatures and don'ts. In reality, the process of blackening those prized images is as simple as the blackening of the family silver.

Furthermore, not only will the simplicity of this apparatus give new confidence to the timorous, but will exert practically no strain on the financial department. You know—money. The total cost

of the complete tank should be less than a dollar for the following:

- 1 rubber tire patching kit.
- 1 piece of discarded film, the same width as the film to be processed in the tank, but about 8 inches longer. This is to form the "apron."
- 1 cold cream jar of suitable diameter. If deep enough, it will accommodate and develop two rolls at one time.

We need first a method of holding the film so nothing touches the emulsion while in the developer. Commercial tanks accomplish this through the use of a reel



- A light proof cover is not absolutely necessary. To make one, however, a paint lid is soldered on the jar's screw cover. A hole "4" is drilled in the lid and also in the jar cover "3." Solutions poured in at "4" run around the baffle "5" and down "3" into the jar.

- "1" and "2" show how the end of the reel is fastened.
- "1A" shows how two-inch strips of rubber are pasted along the edge of the film apron.
- "2A" shows how the beginning of the reel is tacked down to a piece of broom stick.

composed of two sets of spiral grooves into which the film is pushed or threaded. The film thus is held by the edges.

Our reel is made this way: First obtain a strip of old negative the same width as that which you intend to develop, and six or eight inches longer than the longest piece your camera takes. The usual procedure is to contact a friend who uses film a size or two larger than yours. Through bribery or skulduggery obtain a strip that he's willing to give up for the advancement of the cause. Clutch it to your bosom and get it home. Once safe in the haven of your shop, cut this oversize negative to the same *width* as the negative you use, leaving the extra length on there. If unable to secure a piece of the proper size in this fashion take two old strips of your own and ask the projectionist at the local movie house to splice them for you.

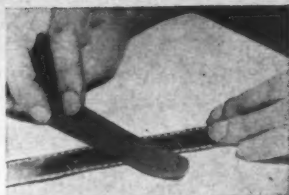
You 35mm. boys will have no trouble at all; a six-foot length of bulk film, or six feet made up by splicing a short length to one of your old rolls, solves the problem to perfection.

Remove the old emulsion by soaking overnight in washing soda solution and scraping off with a table knife or other dull instrument. Allow to dry thoroughly. Incidentally, if there is any splicing to be done, the emulsion should be removed before the splicing is done.

Now, if film does not have sprocket holes as does 35mm, you'll have to punch some. A belt punch or paper punch is O. K. provided it doesn't punch a hole larger than $\frac{1}{8}$ " in diameter. Space the holes $\frac{1}{8}$ " apart and no further in from the edge of the film than the sides of your frames.

The next step involves putting a strip of rubber along the edges of the apron so that when the apron and undeveloped film are wound together, the emulsion surface will be held free from contact. A long strip of rubber or elastic could be threaded through the sprocket holes. A better way is to use rubber tire patching cut up in strips $\frac{1}{8}$ " wide. Purchase a tire patching

● Scraping the emulsion from an old negative.



● Laying the film over the strips of tire patch.



● Attaching the short strips through the Sprocket holes. If your film size is larger than 35 mm., you punch these holes yourself.



● How the locking tab goes under the retaining cross strip.



● Fastening the reel to its wooden core.



● In the dark-room the fingers guide reel and film in rolling prior to development.



kit containing a large sheet of rubber tire patch. Cut this sheet into strips $\frac{1}{8}$ " wide, the total length of these strips equaling four times the length of your film plus eight inches.

Next remove the cloth backing from a sufficient number of strips to go down one side of your film and two inches over. Carefully lay these strips end to end, sticky side up, on a table, being careful not to let them double back on themselves, for once they touch—stuck! Lay them in a straight line and place the film over them so that the centers of the sprocket or punch holes come directly over the rubber strips. Weight the ends to keep film from curling. Film and strip should be even at one end, the strip being two inches longer at the other. Cover this extra two inches with paper so that it can stick to nothing—yet.

From the remaining strips, cut off one two-inch length. Remove the cloth backing and place it sticky side down over the punch holes so that the adhesive on the two strips come into contact with each other *through the holes*. You will find that they adhere instantaneously and with a vengeance. No cement is necessary.

Press this first short strip firmly into place, being careful that the rubber does not come nearer the center of the film than the edges of your exposure frames. Now leave a short interval of about $\frac{1}{4}$ " and place another two-inch strip, and so on, leaving $\frac{1}{4}$ " intervals between strips, thus fastening the strips to the edge of the film and to each other through the sprocket holes, one on each surface of the film, as shown in the drawing at "1A".

These $\frac{1}{4}$ " intervals between the two-inch strips will act as vents for the solutions to pass freely to and fro when the reel is rolled up and immersed in the tank. Continue the process of fastening two-inch strips as described to within six inches of the end of the film. Now place an eight-inch strip in place which should extend past the end of the film for a distance of two inches, the same as the strip be-

neath. The paper over the bottom strip will prevent the two from adhering.

Duplicate this process on the other edge of the film. have the two two-inch extensions at the same end.

A simple method of fastening the end after the reel is rolled up is this: Measure across the film the distance between the rubber strips. Cut a triangle of patching material with a base slightly smaller than the distance between strips. Remove the cloth backing from the triangle, draw two of the strips together to form a point and bring adhesive surfaces into contact as at "1". With rubber cement fasten likewise the other two strips.

Before total completion of this fastening device we will have to attach the reel to a spool, as at "2A". Cut a piece of round stock, dowel, spool, or section of broomstick as long as the width of your film. Drive two tacks through the rubber strips at the end without the rubber triangle tab, and into the spool, being sure that the two-inch strips are facing out. Make one complete turn and fasten again with two tacks through the rubber strips, so that the spool is at all times encircled by one complete turn of the reel. A touch of black enamel on the tack heads will protect them from the actions of the solutions.

The idea is to roll your undeveloped negative up within the reel, the edges resting on the rubber strips, the emulsion suspended between. The curvature of both reel and negative prevents either from bulging or coming in contact.

Holding the rolled reel in one hand, note where the triangle tab lies against the outside of the reel. Mark rubber strips just behind base of tab. Rough these two points and apply cement. Fasten a rubber strip across the film between these two points as shown at "2". To fasten end, simply push tab under this strip and pull through until base of tab catches on retaining strip.

Before we go on to the tank itself, a

(Page 84, please)

Color Demonstration

Fifty fortunate camera fans responded to Frank Randt's invitation to watch him shoot a color picture, as announced in the February issue of MINICAM.

Randt prepared the model in colorful attire. He made many suggestions and offered continual counsel to the boys as to how to proceed with their shooting. After a number of shots were taken, some were chosen to be processed then and there in the studio's laboratory.

The processing was done under the supervision of Paul Lamboit, F.R.P.S., of Dufay-color, Inc. He gave a complete demonstration of how color films are processed. Here are the various steps:

1. Film is placed in a Special Dufay Developer for $4\frac{1}{2}$ minutes, at 68° Fahrenheit, the room in complete darkness.
2. It is then washed in running water for a minute or longer.
3. Then bleached in Dufay's special bleacher for 4 minutes, and washed again for a minute.
4. Then dipped in a solution of $2\frac{1}{2}\%$ Sodium Bisulphate for 2 minutes and rinsed in clean water.
5. The film is then exposed to a 100 watt lamp at a distance of 1 foot for 1 minute.
6. It is then developed in a bromide or chloride paper formula for 4 minutes.
7. Then washed, fixed, and washed again for the last time.
8. Dried and placed in glass frames, it is now a full-grown transparency.

After this demonstration, Mr. Hy Schwartz of the Kalart Co. gave a talk on how to use a synchronizer when shooting color.

Filters for Argus

The new OMAG Filter Kit for the Argus camera contains filters made with the same precision, quality and accuracy as the standard OMAG filters. The Kit includes a medium yellow filter to be used with orthochromatic emulsions, a medium green filter for panchromatic work and a red filter for contrast work (moonlight effects in daylight, etc.). The fourth component is a portrait lens specially designed for portrait work. Each Kit contains a special interchangeable mount and a sunshade.

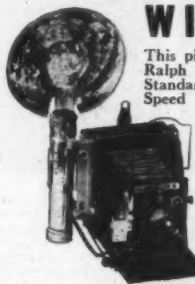
The list price of the Kit is \$4.50 complete. For more information, write Chess-United Company, Fifth Avenue at 21st Street, New York, N. Y.

Intercontinental Marketing Moves To New Quarters

The Intercontinental Marketing Corporation, distributors of Robot Cameras, Perutz Films, Photrix Photo-Electric Exposure Meters and other camera equipment, announces that on and after April 10, it will be located at 8 West 40th Street, New York City. These new quarters will include a large and attractive showroom to which both retailers and camera fans are invited. In addition, there will be a greatly enlarged laboratory and a complete repair department supervised by Mr. Herman Schaar.



SPEED GRAPHIC WINS AGAIN!



This picture of a wrecked airliner by Ralph Forney of the Ogden (Utah) Standard-Examiner and four other Speed Graphic shots won ALL the prizes in the Third Annual National News Picture Contest. Enjoy minicam handiness, larger, more usable pictures and utmost versatility by getting a $2\frac{3}{4}\times 3\frac{1}{4}$ Revolving Back Speed Graphic. With coupled range finder and photoflash synchronizer it's a "natural" for prize-winning pictures.

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Combining Graflex features with minicam compactness—it's "just a handful"—this world's finest miniature reflex is justly popular. F.3.5 lens, ground glass focusing, and focal plane shutter with speeds to 1/500. Ten $2\frac{1}{4}\times 2\frac{1}{4}$ " pictures from each 8-exposure film.



GRAFLEX ENLARG OR PRINTER

Accepting as an enlarger, negatives up to and including $2\frac{1}{2}\times 3\frac{1}{4}$ ", the Enlarg-or-Printer is the darkroom unit to use with the $2\frac{1}{4}\times 3\frac{1}{4}$ Speed Graphic, National Graflex and all miniature cameras. An enlarger, contact printer and retouching desk all in one, it is almost a complete darkroom in itself. Compact and completely portable. Ask your dealer to demonstrate.



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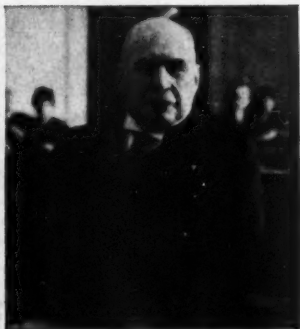
GRAFLEX

PRIZE-WINNING CAMERAS

\$\$\$\$with your MINICAM



- To illustrate the routine story which has few pictorial possibilities, the angle shot is one which gives an otherwise dull subject a lift. The story accompanying the above was an unexciting feature about a mechanic's life, but the photo helped sell the piece.



- Rule 1 for news cameraman is, "Don't let subject look into lens." Why was this famous shot successful? Because it showed J. P. Morgan testifying before a Senate committee when not only the committee, but Morgan himself were opposed to picture taking. Milius photo.



- The crazy angle and the composition of this shot sold it. The form of a high school pole-vaulter is not always the best. An alert news cameraman capitalized on that fact and came out with this amusing photo.

MONEY FOR STRINGERS

WHY is it some free-lance news photographers—"stringers"—can make money and others can't?

This writer is a picture editor for a news photo service and through his experience will try to pass on the fundamentals of stringer photography for profit.

Let's take for granted that the subject which the stringer is photographing is in the first place newsworthy. What then, must be the procedure, and under what criticism must the picture stand up?

News photo syndicates demand above all, four things in pictures which they "service" or send out to member newspapers: (1) speed of delivery to the syndicate's local bureau, (2) precision photography, (3) appealing composition and (4) imaginative treatment of subject.

It's been said a thousand times and will be said again that today's front page is tomorrow's garbage wrapper. The importance of a news picture passes just as rapidly. The picture you make today may be

a smash shot for the front pages and press services may pay a bonus over the regular price—if it's delivered today. But tomorrow, nine times out of ten, it won't be worth a hoot in a hailstorm. News and news photos are transient as time itself. For that reason getting your photo to the nearest dispatching point of the syndicate is tremendously important.

How is this generally done? If you are an accredited stringer—that is, if you have sold pictures to the service in the past and they know and like your work—you might risk sending the photos air-express collect; but it's as easy to use airmail, ordinary mail, express or whatever is the fastest medium.

Wire the syndicate when to expect arrival if the shots are for a very hot story. The press service will tell a good stringer of the fastest routes, and will sometimes arrange for special handling not generally given the public by transport agencies.

Among the best markets for pictures from stringers are:

Associated Press, 383 Madison Ave., N. Y., or the nearest newspaper which is an AP member; considers all news and feature pictures well-presented.

New York Daily News, 220 E. 42nd St., N. Y. This paper carries pictures on most good stories around New York City and on outstanding stories throughout the nation. Pictures must be flashy for this publication.

Pictures, Inc., Chrysler Building, N. Y., carries candid portraits of famous men and women, news and record pictures. Like the *Associated Press*, *Pictures, Inc.*, insists on quality.

International News Photos, 235 East 45th St., New York City.

Times Wide World, *New York Times*, 229 West 43rd St., N. Y., files both news and good record pictures.

Acme, *New York Herald Tribune*, West 41st St., N. Y., uses about the same type of stuff as *Times Wide World*.

Detroit News, Second Boulevard at Lafayette St., Detroit, Mich., carries well-planned feature pictures, and good "spot" pictures on fresh news in its region.

Newspaper Enterprises of America (NEA), Cleveland, Ohio, buys both "spot" and feature.

Los Angeles Times, Los Angeles, Calif., carries flashy pictures, interest in which should be around Los Angeles, unless the story is outstanding.

Include adequate data with each print submitted. On a separate sheet, pasted to the back, give names, addresses and all available information. Many good news pictures are rejected because of lack of data.

If developing and printing your film will mean missing a mail or shipment connection, send the raw film, labelling the package "undeveloped film". The press service probably is equipped to handle the film quicker than most stringers could, anyway. A description of the speed of film and the maker's name is sometimes a help to the syndicate darkroom, but that is not always necessary.

Precision photography is important in getting good prices for the free-lancer's pictures. A picture editor in a large press service sees an unending stream of photographs flowing over his desk. Good, bad, indifferent. He may buy half a dozen out of 60. Time after time, he will toss an otherwise good shot aside—"out of focus", "camera motion", "no depth", and most frequently of all, "lousy composition". Any one of these or other flaws may ruin a stringer's sale. The story behind the pic-

(Page 70, please)

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Color Photography Exhibit

The Color Photography Supply Company, 305 E. 43rd St. N. Y. C., manufacturers of the Devin One-exposure Tricolor Camera and Devin Carbon tissue for tricolor pigment printing, announces an exhibit of the work of America's leading color photographers, to be held in the International Building at Rockefeller Center, New York City, from May 21 to May 29, inclusive.

Among the prominent color photographers whose work will be shown are Anton Bruehl, Fidelis Harrer, Paul Hesse, Victor Keppler, Martin Munkacsy, Nickolas Muray, Paul Outerbridge, Valentino Sarra. There will be many others.

The exhibit will be arranged as a series of one-man shows, with a fairly large and representative selection of the work of each photographer.

It will be the first major show devoted exclusively to color photography.

In addition to the exhibit of color prints, a number of educational exhibits will be given, notably a motion picture, in color, of the process of making color prints by the tricolor pigment (carbo) process.

A new small color camera, 6.5 x 9 cm. (2½ x 3½ in.), built exactly the same as the larger cameras used by these leading color photographers, but with additional refinements such as automatic focusing, will be introduced at the exhibit.

SAVE MONEY ON YOUR PHOTO BULBS



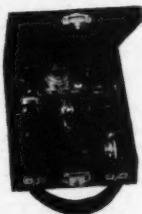
PROVIDES from ordinary light bulbs, always available and very cheap, powerful lighting at a fraction the cost of special photographic bulbs. Lights work at ordinary intensity while making setup and when ready for exposure at a touch of the switch gives a balanced light increase instantly. Use various size bulbs and any number up to capacity of Power-flood. Five power outlets provided. No balancing of bulbs required. No series parallel switches. Light intensity approximates special bulbs. Life at high intensity about the same but because of low intensity switch practical life many times longer. Fine for enlargers, etc.—Low intensity for focusing, high for exposure. Provides ample illumination for night movies, candid shots, etc. Use home lights without changing bulbs.

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ture has to be tops to carry a second-rate photo. On the other hand, a top photo will quite often sell itself. If the story isn't hot, the picture may be used in a rotogravure or feature service.

With the increasing demand for pictures by all types of papers, from the rural weekly to the metropolitan daily, the press service handling photos has felt proportionate increase in competition photographically. Competition furnished by opposing syndicates covering the same territory makes a picture editor think twice before servicing a second-rate photo. And if there is any way possible to avoid moving anything but the best, he will think of it—and use it.

Here is an instance of the result of increased competition:

A large syndicate had difficulty getting good fight pictures because the New York boxing czars clamped down on use of flash bulbs at championship fights. The press service conferred with a film maker and engineers from the two firms experimented. The result of their cooperation is a new superpan four times as fast as the old press pan film. That is the story of insistence upon quality. Clarity, detail, depth, in short, precision photography, which is essential to shots carrying the agency's logotype. If the stringer is to be successful, he must try to match that precision.

Composition of course plays a big part in making photos, whether your prime interest is pictorial photography or shots of news events. Composition in the latter case, however, is not a matter of beauty, but of efficiency.

A good composition, to the newspaper editor, is one that is compact. In such a picture, every square millimeter of its area is important. The human figures are large enough to show up even when your 8 x 10 print is reduced to one-column width (about two inches.)

To permit this reduction in size, the subject of the news must be the center of interest and must dominate most of the picture's area. Generally the head of a person must be at least an inch long in group shots, larger otherwise.

A city editor for whom this writer used to work was often accused of thinking with a slide rule. But one of his tips to me as a cub cameraman was, "one column for each head in a group shot". A column is about two inches wide. That tip has saved me many a headache as a picture editor, because it's still a pretty good rule to go by. So, when a stringer goes out on a story which he knows won't hit the front pages, but offers fair photo possibilities, he will get a shot that is compact, not crowded, economic in space but not niggardly.

Recently a picture editor was looking through the file of pictures to fill a two-column "hole" on his nightly service. The editor had already covered the top news stories of the day. All he needed was one picture that would make a nice two-column cut for the small town papers. Perhaps a picture had come in of the girl down in Jersey winning a 50-meter sprint to set a world record. He found a shot of the girl breaking the tape at the end of the race. But the figures were so small, the picture wouldn't make a two-column, would barely look well as a three column cut, and really required four. The editor passed it up.

Why? Because the picture was not worth four columns in that service. The cameraman had shot looking straight down the track with the runners spread all the way across his negative. If he had shot from a 45-degree angle, the winner would still show, the runners would be bunched closer together and the picture would be compact without looking like a glob of jelly as it would if he had shot directly across the track. The picture of the girl breaking the world record would have moved on that regional service—as a two or three column shot. Being a four, it, like the second little pig, stayed home instead of going to market.

Imagination is another essential to good news photography, and before a stringer can hope to make much money selling pictures to news photo services he must get his brain ticking. By imaginative treatment of a subject is meant, getting the



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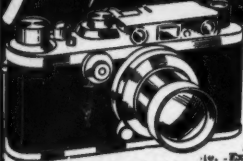
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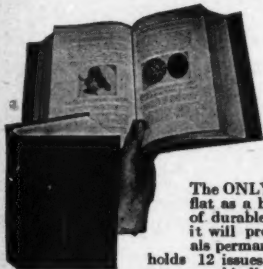


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unusual effect, giving a fresh twist to the photo.

Many, many months ago, "angle shots" raised their heads on the horizon. They were an immediate hit. Today a straight head-on shot is almost the exception. Cameramen lie on their backs, climb step-ladders, hang from chandeliers, and recently a newsreel cameraman, Al Mingal-lone of Paramount, made the angle shot to end all angle shots—from a balloon. (For Mingal-lone's story see *Minicam* for Dec. 1937).

For the routine story that needs a photo but has few pictorial possibilities, the angle shot gives a lift to an otherwise dull subject.

Among the most popular gags to get away from routine in sports "still" (as contrasted to action) photography is to shoot the newly crowned golf champion kissing his wife or sweetheart. This gets away from the proverbial posed hand-shaking shot with the runner-up. Another one is the pre-fight picture where the chal-lenger takes a playful sock at the cham-pion's jaw.

The newspaper reader who sees the stringer's photo in the paper doesn't want to be reminded that a cameraman took the picture. He doesn't care about the camera-man, he wants to see what the event looked like.

And therein lies the difference between a good unusual shot and a bad unusual shot. If the photo does not remind the newspaper reader that a cameraman posed it, then it can be a good picture. But if the photo is obviously posed and the thought of the cameraman is intruded on the reader's mind, the product loses value. In other words, a "posey" shot is self-con-scientious. A seemingly unposed picture is more attractive because it seems candid, natural, un-faked.

Posed or unposed, the photo with orig-inality and unusual treatment is one step ahead of its opposition. Add to that ad-vantage, precision, good composition, and your shot is ready for speedy dispatch to the local bureau of one of the big news agencies.

Camera Detective

(Continued from page 54)

do not remove the ink at all but merely bleach it. That means that there is the original chemical deposit on the surface of the paper. The photography of the questioned paper upon panchromatic film with various filters will often yield a legible trace of the writing.

To do this, the paper should be photographed by transmitted light, that is, with the light shining through it into the camera, instead of in the ordinary way with the light reflected from the surface. In the case of unknown conditions, it is routine to photograph the subject both by transmitted and by reflected light. With each lighting method, three exposures are made—for underexposure, normal exposure and overexposure.

In addition, the filter test should be made, ordinarily with the three color filters at first, the blue, the green and the red. The method which yields a suggestion of the original writing then can be followed up. If, for example, the underexposure by transmitted light and the exposure with a green filter, each shows some writing, then yet more conclusive results should come from the combination of the two (green filter and underexposure by transmitted light).

Burned Paper

Another thing of interest to the experimenter is the restoration of printed or written papers which have been burned.

There is an element of mystery in bringing back writing or printing which has been burned. It is not easy, one of the greatest obstacles being the fact that in burning the paper is inclined to crumble. When the paper has completely curled up upon itself it is sometimes possible to carefully break the pieces and with a brush arrange them in their proper order on a piece of cardboard.

One stunt which has been tried with some success is that of coating a cardboard with a thin layer of rubber cement which is allowed to dry. The burned paper is

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laid upon the cardboard so that one edge is in contact with the cement. It is brushed down with a soft brush so that the cement holds it and then a small area at a time of the burned paper is forced down by the brush. Of course, being only an ash, it breaks continually; but the broken fragments are retained in proper alignment by the tacky cardboard. The larger the pieces of ash which can be retained, the easier will be the subsequent work. If the operation is carefully performed it will be possible in most cases to have the average size of the fragments about a half to a quarter of an inch square in area and still not raised above the backing board more than an eighth of an inch or so. This of course depends upon the nature of the burned paper.

This procedure should not be followed when the original is of any value. When it is purely experimental, if a failure is encountered, the whole thing can be repeated. Experience will provide facility in handling broken fragments of charred paper in this way, but because the ash cannot be removed from the cemented surface of the cardboard without complete destruction the method should not be employed for serious work.

When the original charred paper has been prepared it is carefully arranged and photographed by infra-red light. In professional procedure two or three varieties of infra-red plates are used which peak at different regions in the infra-red, but for amateur experimentation the infra-red film which is available in both 35mm and small cut sizes as well as in plate form will often prove satisfactory.

The underlying principle of the photographic restoration of burned paper is the fact that physical substances do not photograph by infra-red in a manner corresponding to their photographic action by visual light.

For example, a line drawn with black ink on black paper will not be discernable to the eye, but to infra-red film the line of ink will photograph as distinctly lighter than the background.

The same thing holds true in many

cases after the document has been burned. It will be seen that even visually some traces of the writing can be discerned in the ash but by infra-red photography it can be read without difficulty.

Detecting Forgeries

There are two other factors involved in the examination of handwriting which are often important, but which are of greater importance to the expert doing serious work than to the amateur. However, the deliberate preparation of examples for such examination will afford a continuation of this fascinating adventure into the realm of camera detection.

These two factors have to do with the factor of time, the determination of which of two lines was written after the other. That is, suppose the body of a document has been hand written. It is naturally assumed that each word was written after the word before it, as this is the natural order of handwriting. However, if an alteration is suspected and cannot be detected by any means at the investigator's command it may be possible that the suspected word crosses another word. This is likely; for example, if the word contains a "y" or a "g" or other letter which has a loop extending downwards, or if a stroke after the last letter extends to cross a part of the following letter. Making the photographic copy and the enlargement, it will be seen that when the latter or added pen stroke were written on crossing an old ink line, the wet ink spread into the old line.

This means that if a fresh ink line is drawn across an old ink line there will be a spreading only in the direction of the old line and not in the direction of the new one. Thus if we find that the loop of a "y" crossing a penstroke of a word on the line beneath shows ink spreading into the line of the word on the *following* written line, then, although the word above should have been written previous to the one below it has really been written after. This is absolute evidence that the word above was in-

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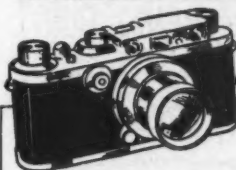
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serted into the document after the body of the document was written.

Paper Folds

Another similar instance is that of changes in a document which has been folded, a condition very common in paper. Usually when the piece of paper is folded it is done so for the purpose of enclosing it in an envelope, placing it in a file or for other storage purposes. Not only is the paper folded but it is usually compressed so that the folds become quite sharp. This results in a certain breaking of the fibre and of the surfacing of the paper. Naturally when the paper is first written and then folded the ink line is broken at the fold together with the surface of the paper. However, if anything is written upon the paper after it is folded, and this writing extends across the fold of the paper, not only will the ink lines be continuous but it will also spread out into the cracks caused by the folds. Of course these things are easily discernible to the naked eye when certain kinds of paper are used, but in the case of ordinary bond paper or writing paper these are characteristics which can be very definitely seen by the photographic enlargements but cannot usually be noticed by the naked eye.

Obviously this field of the examination of writing and typewriting is so vast and so complicated that the space at our command here does not even serve as an introduction to it. However, the experiments which have been indicated are sufficient to provide many hours of fascinating specialized photographic experiments; and experiments which can be turned into very good fun if you wish to acquire a reputation as a detective among your own friends.

The Detective Game

First practice making the tests as described above: the problems of alteration and erasures; identification of handwriting and typewriting; the deciphering of burned documents; and the determination

of words written in subsequent to the writing of the main body of the letter. Determine by your own experiments the extent to which you can depend upon direct, reflected and transmitted light, upon the use of infra-red film; and the specific effect of the various filters you have at hand.

You can then startle your friends by adapting these things to an amateur detective game.

First request that each one of a group submit a sample of at least one hundred words of handwriting, and an equal quantity of typewriting from his personal machine. It is only fair under certain conditions that you also request the name of the machine used, and this will give you some information which you can use in starting your comparative files.

When this has been done you can then offer to mix up specimens of typewriting or handwriting and to endeavor within 48 hours to indicate the writer. You can also undertake to decipher messages written on paper and subsequently burned, to decipher messages which have been written in ink and then erased, and make all the other identifications as described in this article. A man seldom realizes it, but every trivial act throughout his lifetime is indelibly stamped with the mark of his individual personality.

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WHAT SHUTTER SPEED?

(Continued from Page 18)

show the advantages of recording more or less movement in the negative.

Gauge your shutter speeds to "freeze" most of the subject, but slow enough to show the movement of part of the subject. Show the fastest moving part, a flutter of wing tip, whirl of skirt, or quiver of an eyelash.

When in doubt, you will want to do some experimenting with your subject and use various shutter speeds. You will learn for example, that it takes a shutter of 1/10th of a second or slower to show the bat of an eyelash. In the series of portraits on the previous page, the girl was photographed at shutter speeds varying from 1/25th to 1/1000th of a second without any apparent difference. The model winked continuously during each exposure. Glance quickly along the prints of the winking girl from top to bottom and from the bottom of the page to the top and you will get the action of the closing and opening eyelash.

For your experiments, select a subject moving at a constant rate of speed, and shoot at least three negatives of each action.

The use of a high shutter speed means adequate light. Speed photography indoors or on "heavy" days outdoors makes use of a fast lens and fast film. Employing the latter elements, the amateur may shoot pictures indoors at very fast shutter speeds, provided the floodlights are close to the moving subject and the latter is able to stay within a limited area.

On the other hand, the photographer supplied with a flash gun can shoot at very high shutter speeds by the split-second illumination of a flash bulb merely by adjusting the lens diaphragm to suit the distance covered. Also, he is less limited as to area because he can move camera and light quickly from one area to another, provided, of course, that he always maintains the proper distance from the subject for the lens opening used, the size of the flash bulb and the speed of the film.

BOOK REVIEWS

CREATIVE CAMERA ART, by Max Thorek, 156 pages, 75 large illustrations, \$3.75. Fomo Publishing Co., Canton, Ohio.

From the pen and camera of a famous pictorialist, this book is interesting for its ideas as well as its photographs. Pictorialism in photography has gained rapidly in the past two decades—the material in this book is authoritative and the pictorial prints of the author have been exhibited in practically all the competitive salons in the world. Especially valuable, not only for would-be exhibitors, but also for seasoned veterans, is his discussion of paper negative technique, of which he is a master. The book covers a wide range of photography relating to pictorialism and not only tells you how to make successful salon prints, but also gives penetrating information on their preparation, finishing touches, mounting, titles, etc. A chapter is also devoted to camera clubs, salon judging and judging.

NATURAL COLOR PROCESS, by Carlton E. Dunn, 206 pages, \$2.00. American Photography Publishing Co., Boston, Mass.

The author of this book has talked and corresponded with hundreds of commercial photographers who desired a concise outline of the available methods, and practical instruction in color photography as used in advertising. The data in this book has been assembled with the assistance of experienced workers and covers completely the theory and technique of color photography for the experienced worker. A search through the contents shows chapters dealing with Simple Color Analysis, Making Color Separation Negatives, Autotype Trichrome Carbro, Belcolor Printing Film, The Chromatone Process, Reliefs for Color Prints and Transparencies, Screen Color Transparencies, Dufaycolor, Multilayer Color Processes,

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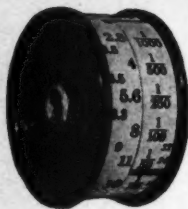


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Circus!

(Continued from page 17)

one night during a "straw house." In circus talk, that means all seats have been filled and late comers sit on straw around the hippodrome track. I found a "straw" seat near the center of the huge tent. I was only ten feet from the center ring—in perfect position for minicam work.

At night, the light under the canvas tops is not as bright as when the circuses play indoors at Madison Square Garden or the Stadium in Chicago. In either case, judge lighting carefully. I shot most of my under-canvas art at $f/2$, $1/60$ th second, using Eastman Super-X film.

If you sit near the entrance where performers and elephants trek back and forth you may have a chance to get some striking silhouette views. I usually make silhouette shots of this type at $f/4.5$, $1/100$ th second.

If, like me, you are a circus fan as well as a camera user, you will find that taking minicam to the circus, in the barker's words, is "the thrill of a lifetime".

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Stereo Closeups

(Continued from page 51)

one illustrated. It has transformer-operated flashlight lamps mounted right on the turntable. The lights rotate with the subject and thereby eliminate a disagreeable shift of the shadows which takes place if the lamps are stationary. This, however, is not absolutely essential as the flat lighting seldom produces noticeable shadows.

Splendid stereos may be made without any such elaborate outfit, if mine could be so called.

As to exposure—with the two small lamps (three cell, 4 volt, flashlight bulbs) about 1½ inches from the subject, the average exposure is 8 seconds at F22. At this distance these little lamps will prove as strong as a photo flood at one foot. Also, you will not worry about heat. Cover the lamps with aluminum paint except a small aperture through which the subject is illuminated. These small lamps are not to be scoffed at. Many types are produced for the medical profession to illuminate body cavities, both for observation and photography. With the lamp painted out as above mentioned there is no danger of the filament getting into the lens.

Insects to be photographed should be killed to be sure they do not move, either during or between exposures. Insects belonging to the beetle family, ants, and all horny-back types are hard to kill; the cyanide jar is the only reliable method.

A multitude of subjects will at once come to mind. Any object from a large moth down to a salt crystal is fair game. Much can be done by placing your subject in a more or less natural environment. A three dimensional stage could be set up showing the entrance to an ant hill. It will amaze you to see how the stereoscope fits the most insignificant atom into its allotted niche. Meticulous care must be taken in the placement of "props" and effects.

Color is the ultimate in this work. The writer mounts his kodachrome transpar-

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Perspective

(Continued from page 49)

age. For example, if we have a contact print measuring $1 \times 1\frac{1}{4}$ inches, made with a two inch lens, then that print should be viewed from a distance of two inches (assuming the subject photographed was at infinity or a considerable distance from the camera).

It is also easy to see that if that same negative is projected through the same lens to an infinite distance, any enlargement made by interposing a plane at any distance from the lens, would require viewing from the distance of lens to paper. In actual enlarging of course the lens distance is more than two inches, but even in practical enlarging, when the camera lens is used for making the enlargement, accurate perspective will be approximated by viewing the picture with the eye at the same distance from the paper that the lens was when making the enlargement!

In short, if the $1 \times 1\frac{1}{4}$ picture should be viewed at two inches, and enlargement $6 \times 7\frac{1}{4}$ should be viewed at 12 inches; an 8×10 enlargement at 16 inches and so forth. For this reason, although the lens does give a perspective which the eye really cannot see, we can truthfully say that the lens is more highly perfected than the eye itself.

The other conclusion is that we have become so accustomed, through years of looking at pictures, to the accepted, conventional treatment of perspective, that the pictorial reproduction appears correct to us even though it is wrong. As we cannot accept two different things as being correct, we are forced to conclude that a representation of perspective which is correct would not be acceptable to us merely because it does not conform to the

convention to which we have become accustomed.

It seems strange, no doubt, to make this statement that we cannot recognize truth because we have become accustomed to falsehood, but this is very easily demonstrated, by the description of the Chinese convention given earlier in this article.

There can be little doubt that when pictures were first introduced, drawn according to the rules of perspective, they appeared just as strange and just as unnatural to the general public as do the modern miniature photographs which show tall buildings rising to a needle point.

Perhaps the strongest support which can be cited in respect to this question of perspective is the fact that we already are becoming accustomed to the existence of vertical perspective in photographs, even though as recently as ten years ago such photographs would not have been published by any editor in the entire country. Today we almost expect a photograph of a skyscraper to dwindle away to a small top. Photographs made over a large city such as New York, from an aircraft and looking down still presents an unusual appearance in that the tops of buildings appear to be larger than their bases but this is merely strange because so few of us have taken this point of view.

It may be assumed, therefore, that we are fully justified in stating that it is not necessary to correct this vertical perspective by tilting the enlarging easel or by any other manipulation. We are furthermore warranted in going a step further and stating that a photograph which shows a building with parallel vertical edges is totally wrong and a definite distortion. We should be willing to accept factual appearances, that is, we should be willing to accept photographs which actually show us objects as they really appear to the eye when directly viewed. Therefore we should not only accept but should demand that a photograph of a tall building made from the ground should show

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As to whether we shall, in the immediate future, come to accept curvilinear perspective or not is open to question. Whether we shall make use of lenses which will give this effect (and such lenses are more easily made than our present ones) is also open to question. We must choose between demonstrable facts and appearances which satisfy visual perception. Regardless of our choice between these two, we must accept as established, the correctness of vertical perspective.

The writer wishes to express his indebtedness to Mr. G. L. Briem of New York for the use of his etching and for suggesting the new line of thought relative to dynamic perspective.

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Build Your Developing Tank

(Continued from page 66)

word on loading the reel. Let's try it out on an old negative. Of course when working on undeveloped negatives this must be done in absolute darkness. However, it is good practice to try it a few times in daylight first, using an old roll.

Measure the diameter and thickness of the rolled up reel and obtain a glass jar with a flat, metal screw top, the jar being of a size into which the reel will comfortably fit. If you make two reels, as I did, you will need a jar twice as high. I find that some cold cream jars are just right for a single 35mm. reel and a one-pound salve jar is ideal for two reels. Druggists discard these when empty so I got mine free, gratis. If you don't use 35mm. film find a jar that will take your size film.

Remove the top and thoroughly clean the jar. When dry, give outside three or four coats

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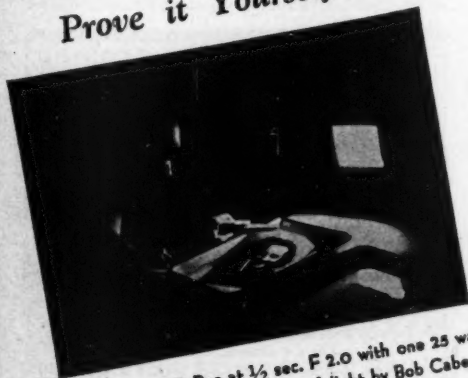
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of heavy black enamel, including the bottom. Paint right up to, but not including the threads.

Tank and reel now are completed. After you become accustomed to using the developing tank, you may start wishing for a cover with a light proof valve so you can develop in daylight. The film would be loaded on the reel in total darkness, put into the jar (which is clean and dry) and then the cover screwed on. The rest of the operation is done in daylight. The loaded tank is taken out into the light and developer poured in through the light-proof valve. After the required number of minutes, the developer is poured out and the hypo poured in.

To make a light-proof cover, obtain a lid from a paint can, slightly smaller than the jar top. Put this lid on the jar top and scribe a line around it. About one-fourth inch inside of this line cut a half-inch hole in the jar top. This hole is indicated by the dotted circle "3." Cut a same size hole in the top of the paint can lid "4." Through the hole solutions will be poured to flow over the jar top to hole "3" and down into the jar.

To exclude all light, a baffle is placed between the two holes across the jar top, between jar top and paint can top. For this baffle, bend a strip of tin into an "L" section, long enough to reach across the inside of the can lid, leaving $\frac{1}{4}$ -inch clearance on either side. Solder this inside the lid as shown at "5."

Paint jar top and can lid inside and out with black asphaltum, which is acid proof and cheap. Wipe threads clean.

When dry, place can lid on jar top with holes at opposite sides, the baffle naturally coming between. Scrape asphaltum from both jar top and can lid to permit soldering together. Be sure that baffle comes down into contact with the top of the jar top, then solder can lid to jar top, flowing solder heavily around the shoulder formed at the juncture of the can lid and jar top, as "6."

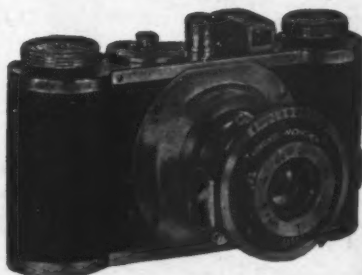
A rubber ring for a washer between the jar and the light-proof top thus formed, an external coat of paint for the top and the job is done.

In total darkness wind the film on the reel as directed, insert in tank and screw top on. Develop according to directions packed with film. When pouring, tilt tank so that pour hole is higher than the rest of the tank, this will cause fluids to run away from hole rapidly and prevent bubbling as air escapes. agitate by shaking gently as development proceeds. In emptying, it may be necessary to rock the tank back and forth, upside down to drain the last drops as the holes are at opposite sides of the tank and the liquids must run through first one then the other.

If, upon completion of fixing, you should find small sections of unremoved emulsion

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along the edges of the film, do not be concerned as this is caused by the rubber strips preventing the hypo from reaching that small section. If you have followed instructions closely, these sections of unremoved emulsion will appear very close to the edge of the film and not in the frame at all and therefore will have no effect on the prints from these negatives.

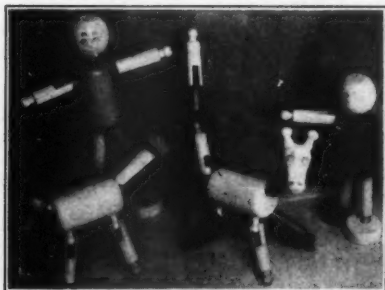
This tank is the third one I have built at home and I assure you it was the easiest of them all to make.

A Minicam Movie

(Continued from page 63)

will allow each picture to be pasted in exact position.

It is necessary that these ruffle movie books be securely bound. The best job is done with wire stitching. The stitching may be accomplished in two ways. If a small tin template is made, this can be used to punch holes by the employment of a needle. The second way is to stack the cards together, place in a vise and drill the holes with a No. 40 drill. With the cards in the vise, he may thread the wire through and twist it tight with pliers. The wired end may be covered with black tape. Further finish may be supplied the booklet if the maker wishes, by executing



• Jointed toys of this kind make excellent actors for child subjects. Jointed teddy bears and dolls may also join the minicam movie colony.

some sort of a design or printed title for the cover. Or a photograph may be used on this cover card.

The writer's four year old son was not without his fun in this movie business. As a matter of fact, he benefited very largely and saw his first moving photographic object this way. Inasmuch as he displayed such childish wonder at his dad's movie antics, dad, sucker like,

thought it would be nice and kind to work up a subject just for the little fellow. Some weeks before, son had received a present consisting of a box filled with little wooden pieces which when fitted together made cows, giraffes, men, etc. The legs, arms and heads were all jointed and therefore free to be moved about. "Paw" got to thinkin' the matter over, and, begosh, if he didn't decide to animate these wooden denizens of toyland. One night he waited until the household pet and nuisance had been sent off to bed and he put through a set of pictures involving a man who struck a cow a sock on the jaw which was so terrific that it sat the poor old cow right back on her haunches.

If the photographer has a number of youngsters in his family, he can have scads of fun putting through subjects of this kind. Teddy bears and dolls are both jointed and hence may be made into excellent actors for minicam movies. If "paw" is handy with tools, he may make a little three-foot stage with scenery and put through a series of films that have some continuity. In the case of the jointed toys, no one gets tired or impatient and the taking of the picture may be left from one day to another after it is started. A hundred feet of film so used up will yield a long series of booklets and they may be made with a most satisfying continuity as far as the kids are concerned.

Mercury Hypersensitization —How To Increase Film Speed

TO TREAT your film a few drops of mercury (quicksilver) is all that is needed. The amount is not critical; obtain half a gram at a drug store. Place the film cartridge in a box with the mercury in an open non-metallic dish. The mercury is active over the entire length of film, even in a tightly wound spool. Let stand for about two weeks and then use the film as usual in the camera.

For quicker results, the process is carried out in the dark room by unwinding the film and placing with mercury in a light-tight box. A developing reel is fine for this purpose and avoids scratching. After about 24 hours, re-

Bass Bargainingram

Vol. 28. No. 5.

MAY, 1938

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wind the film on its spool in the darkroom.

As a result of the above treatment, most films will have an increased speed of about 100 per cent. Film with a Weston speed of 32, for example, may be used at Weston 64. This means that a picture taken at 1/50th second before may be taken at 1/100th second after hypersensitization.

The increased speed of the new, faster emulsions is only about 50 per cent. This means that a picture correctly exposed at 1/50th before hypersensitization, would be shot at 1/75th after.

Agfa Ultra Speed, for example, rated by Weston at 64, would by hypersensitization be stepped up to Weston 96.

Agfa Ultra Speed, however, developed in Agfa 17, DK76, Edwal 12, or other like developers has been successfully exposed at a Weston speed rating of 128. This speed, by hypersensitization would be increased to Weston 192.

With Ultra Speed and the other new fast Agfa emulsions, decrease treatment time to about 10 days when film is treated rolled up; to approximately 16 hours when film is treated unrolled. If treated more than two weeks or 24 hours, respectively, these films have a tendency to fog.

If a roll of film loses its sensitivity before being used it may be treated again, as many times as desired, provided it is not overtreated.

The mercury treatment may be applied either before or after exposure, but should not be applied both before and after unless there is a week or more between treatments.

Treatment applied after exposure usually results in slightly increased speed over the before-exposure treatment.

The mercury treatment lasts approximately two weeks, the film gradually losing its extra speed. Maximum speed, however, may be retained for six weeks or more by placing the film in cold storage. Put in a closed can or box and store in a refrigerator. When removed for use, container must be allowed to come to room temperature before it is opened to avoid condensation of moisture on the emulsion.

Mercury hypersensitization does not affect the film's grain size, color sensitivity, or contrast.

(The above is written in response to many requests for the essential facts about how to hypersensitize film. For a description of how mercury vapor affects a film emulsion, see the article on page 68 of MINICAM for January.—Ed.)

Kalart Range Finder

Kalart Synchronized Range Finders are now available for most 9 x 12 cm. and 2 1/4 x 3 1/4-inch camera and lens combinations.

PHOTOGRAPHY TRADE NEWS



New Photo-Electric Exposure Meter

Photographers who have often longed for an extra pair of hands will welcome the new PHOTRIX exposure meter which can be worn fastened to the wrist, leaving both hands free to operate the camera. While working on the same principle as any other photo-electric exposure meter the PHOTRIX does away entirely with dials or levers that require "setting."

Of course, the PHOTRIX need not be worn on the wrist but can be held in the hand like any other photo-electric exposure meter. Unlike the ordinary exposure meter, however, the PHOTRIX has no computer dial unto which the readings of the needle have to be transferred. The function of the computer is performed by a unique arrangement of the scales on the main dial of the PHOTRIX.

Briefly, the secret is this: For a number of popular film speeds and f-stops, for instance 23 SCH (24W), f11 or 20 SCH (12W) f8 etc., the exposure time can be read directly at one glance. For other f-stops, all one has to do is to go stepwise to the right or to the left on the scales of stops and exposure time. For use with moving picture cameras, a "frames per second"-scale is inserted into the exposure time scale.

In addition to the ease of operation, the PHOTRIX has an unusually high sensitivity. Distinct readings are, for instance, obtained at light levels so low as to require 30 seconds exposure time at f11, 23" SCH.

The PHOTRIX is distributed by Intercontinental Marketing Corp., 8 West 40th Street, New York City.

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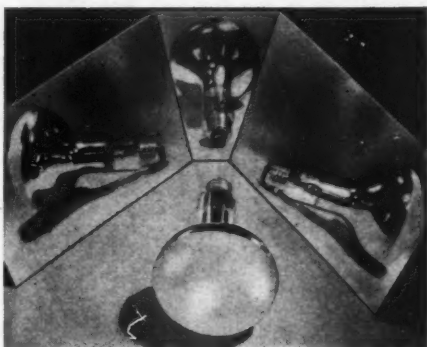
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New Flood Lamp

Elkay Photo Products, 303 Washington Street, Newark, N. J., announces a significant improvement in flood lamp lighting. A whiter, brighter and more even light with greater economy, is promised by the Schickerling Mushroom Bulb Photo Flood, so named because its main body is shaped like a mushroom. Conrad Schickerling's (famed throughout the radio industry for its advancements in radio vacuum tubes,) Mushroom Bulb has an average life of ten hours of peak performance, plus ten to fifteen hours more of adequate working illumination, giving improved color balance throughout.

Construction features of the Mushroom Bulb include the concentrated cool coil filament, large heat dissipation area, much higher actinic value, silver nitrate and aragon filler and an ultra high vacuum. It has an inside nitrate silver reflector and an outside frost diffuser.

Due to the unusual filament design, the Mushroom Bulb projects a whiter light with an extensively improved red actinic ratio. The nitrate silver reflector further aids this phenomenon.

The Schickerling Mushroom Bulb may be used in all phases of photography where artificial light is needed—in the home, studio work, commercial photography, laboratories, still and moving pictures.

This bulb operates on either AC or DC, 8 amperes at 120 volts, 38,000 lumens. It sells for only \$1.00 each. Further information may be secured from Elkay Products.

Raygram Easel

The Raygram Corporation announces its newest product, the Raygram Easel Number

1616. This easel board 16"x16", 5 plywood, is built in one unit, combination border mask and paper holder hinged to the board itself and fastening in position along front edge. This insures perfect contact of all points between the paper and the board.

One of its unique features is a calibrated chart marked off in divisions of $\frac{1}{4}$ " both vertically and horizontally so as to facilitate cropping of picture at any position on the board with dimensions plainly indicated.

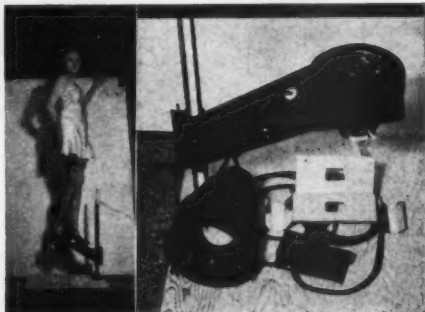
Retails at \$4.75. Literature on request from Raygram Corporation, 425 4th Ave., N. Y. C.

Ulrich Synchronizer

The Raygram Corporation, New York, announces that it has taken over distribution of the Ulrich Synchronizer. Here is a practical synchronizer for amateur or professional which fits any kodak or camera using cable release. No wires. Made in one unit.

Test lamp attached to set shutter and flash off simultaneous. Test lamp can be used for setting shutter in dark places.

The complete outfit will retail for \$5.00



Min Larger

The new Min Larger features steel, welded, construction that is practically unbreakable. The photo of the 120-pound model standing on the supporting bracket gives an idea of the bracket's great strength.

This bracket is a hollow steel column, double triangular shaped. A Hi-Low light control gives dim and bright stages of illumination to suit thin or dense negatives. Due to the use of two ground and polished condensing lenses, which give even intense light over the entire negative, a 60 watt opal bulb is ample for average requirements, giving ten diameter enlargements, or about 10" x 15" from normal 24 x 36 mm negatives, in five to ten seconds. A photo-flood bulb may be used if desired.

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How Omag Filters Are Made

It is difficult to understand why the average photographer will go out of his way to spend large sums of money for so-called precision lenses and then when it comes to buying filters to fit over these lenses, will seek out the cheapest filters on the market. As great a degree of precision is necessary in producing filters as goes into the manufacture of the best lenses. If filters are produced accurately, there is no reason for them to be wafer-thin, as is currently believed. If the surfaces are definitely plan-parallel and optically flat, the filters may be as thick as 2mm without affecting focal length or definition. It is only where surface accuracy cannot be maintained because of the manufacturing process by which the filters are produced, that area may be infinitely lessened in proportion to the thickness of the filter. By making filters too thin, physical stability and resistance to shock and handling are sacrificed.



OMAG filters are made from *genuine* optical glass produced by the crucible process. The color in OMAG filters is inherently uniform and for that reason, our filters are made to correspond, according to very strict tolerances, to the popular gelatine types used extensively in this market. Upon investigation, you will find that, from batch to batch of the same specific type of filter, there is very little variation in color and density. This is necessary, because when a man becomes accustomed to using, let us say, an OMAG medium red filter and suddenly loses it, he must be able to obtain another OMAG medium red filter that will be exactly like the one that he lost.

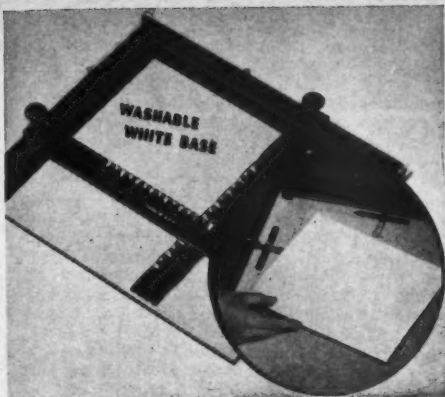
For more information about OMAG filters, write Chess-United Co., Fifth Avenue at 21st Street, New York, N. Y.

Penn X 10.

The new home of Penn Camera Exchange at 126 West 32nd St. in New York will cover over 6,000 square feet.

The ever increasing business enjoyed by Penn Camera Exchange in their recent years necessitated the acquisition of this enlarged store which is 10 times its former space.

Every modern and up-to-the-minute type of photographic merchandise will be found at Penn's new home.



"Quick-Set" Enlarging Easel

Amateurs and professionals alike will appreciate at a glance the innovations which the manufacturers have introduced in the new "QUICK-SET" Enlarging Easel. All improvements have been made with a view to increasing efficiency and accuracy on enlargements. Noteworthy is the white, washable base on which preliminary focusing may be done with unusual clarity. Of interest, too, are the graduated and adjustable paper stops into which the paper may be slid with one hand and fixed in the desired position for required marginal widths.

Uneven, sloppy margins are impossible with the "QUICK-SET" easel. The graduated masking bands are etched into the metal and the figures are easily visible under the safe-light.

"QUICK-SET" easels are, like all QUICK-SET equipment, precision built to meet the exacting demands of the professional and the painstaking amateur. Made by Whitehall Specialty Co., 1250 Fullerton Ave., Chicago.

Titling Simplified

Striking titles can now be produced by means of the simplest technique imaginable. Sponge-rubber provided with a special suction-pad backing are pressed in place on any smooth hard surface such as cardboard, glass, mirror, wood or any photograph or picture. Letters stick tightly yet can be instantly removed merely by lifting up a corner or side. Thus the letters are used over again for no end of different titles and effects.

Spell-O-Tex Titling Sets come in a standard font mounted in a handsome permanent file book, complete with alignment gauge and plain title background, sell for only \$5.25. Letters are available in silver for title shooting with any reversal film, in black for direct positive titles, or in blue for technicolor. Letters are picked out of file book and pressed in place on titling board or other surface. No adhesive required. No preparation of any kind. No skill required. Letters can be arranged in straight lines, curved lines, horizontally or vertically, and in fact, in no end of varied layouts.

If any dealer cannot supply a set, Besbee Products Corp., Trenton, N. J., are the manufacturers.

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You will be proud to own this Sensational Purma Special—a high precision instrument, beautifully constructed and capable of photographic results equal to any camera. ORDER NOW at only \$15 prepaid or C. O. D., plus Postage.

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MIN IS A SUPER VALUE made possible only by quantity production and selling direct to the user. Min is also furnished without lens, \$17.50; with Rayonet mount fitted for CONTAX lenses, \$22.50; with mount to take FOTHA DEBY lenses, \$18.50; with flange for LEICA lenses, \$20.00; 20" x 24" baseboard, \$1.25; 48" upright, in place of regular 24", \$1.50; opal bulb, 50 cents. Paper holder, for up to 10 1/2 x 13 1/2" prints on 11" x 14" or 14" x 17" paper, \$3.95. ALL PRICES ARE POSTPAID, subject to return within 10 days. TINY MIN UNDER OUR MONEY BACK GUARANTEE. Please state carrier desired—if for 24 x 36 mm (1" x 1 1/2") or 3 x 4 cm (half vest pocket) negatives.

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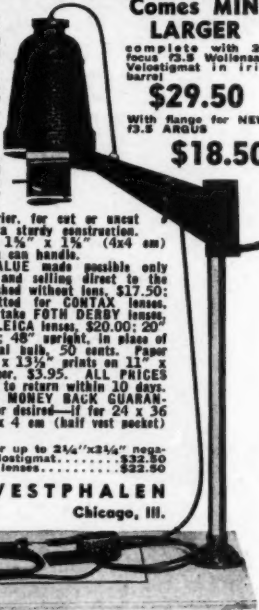
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New Novel Light Meter

So sensitive is the retina of the eye that at night objects can be seen with very little light. In bright sunshine, however, if the eye did not provide some means of reducing brilliant light, the retina would be seriously damaged and over-strained. Just like any good camera lens, the eye has its iris diaphragm. But the iris of the eye works automatically, cutting down or increasing the light reaching the retina as outside conditions may require.

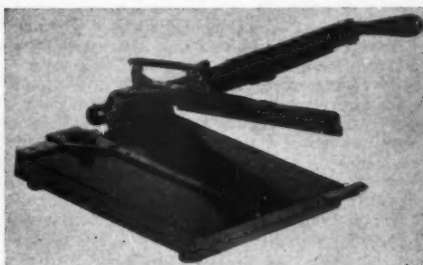
But this great advantage for the eye is a disadvantage in judging light intensity when taking pictures. On a dull day it always seems lighter than it is because the iris opens, and on a bright day the intensity of the light is generally under-estimated because of the manner in which the iris automatically cuts down the glare. For this reason it is difficult, if not impossible, for the amateur photographer, to judge light accurately without an exposure meter.

With the tremendous advance in the art of manufacturing plastics, a new meter has just been introduced which gives readings of high accuracy. The new tubular meter is said to be as accurate as some of the electric exposure meters on the market.

The new meter consists of a long, black, plastic tube on which three rotating collars are mounted. To judge the light conditions, the amateur simply sets the collars for the type of film he is using and the general type of subject. Then by viewing his subject in spy-glass fashion, at the same time rotating the third collar, he gets an automatic reading for either his still camera or his movie camera. No extra calculations are required. For any shutter speed the correct diaphragm opening is immediately given with all corrections made automatically for filters, speeds of film, types of subjects, etc.

Retails for \$2.30 with case.

By Universal Camera Corp., 32 W. 23rd St., New York City.



Alfa Print Trimmer

There's a print trimmer on the market which you ought to see, if you desire a precision instrument. It trims square and can't get out of true because of its all-steel construction. Even curled prints can be trimmed easily. A rubber-faced clamp holds them flat against the trimming edge.

Alfa Machine Company, 1301 North Fourth Street, Milwaukee, Wis., has a folder describing this trimmer. Write for Bulletin 303.

Hollywood Enlarger Projector

A single turn of the revolving head of the Hollywood Enlarger-Projector converts it from an enlarger to a projector for viewing color film, positive transparencies, etc.

It is designed especially for 35 mm. film but will take 1/2 vest pocket negatives.

A new type of opal enlarger bulb is furnished for the light source and by special order a cold mercury lamp can be supplied.

The film carrier is of the new slotted type, eliminating glass pressure plates. It will not scratch negatives. The Hollywood Projector-Enlarger can be supplied with an adaptor for use with Leica, Contax, or other miniature cameras. The price is \$35 with 2-inch, f/4.5 lens. Without lens but with interchangeable lens mount, price is \$25.

For an attractive circular write Hollywood Photo Supply Co., 5855 Hollywood Blvd., Hollywood, Calif.

New "Jackson Printer"

A new all metal Contact Printer, at \$6, is now on the market. A novel feature of the Printer is the green signal indicator which aids the operator in watching printing time.

The Jackson Printer is designed for negatives up to 4" x 5" and has fully adjustable masking device for all smaller sizes. The negative is held firmly in position by means of a spring pressure clamp. The pressure plate is double hinged and provided with a new type of rubber material which assures even contact with the sensitized paper.

A special feature for minicam enthusiasts is the "strip-printing" arrangement which is provided. A continuous roll of 35 mm film from the minicam may be strip printed without the necessity of cutting the film or removing it from the printer between exposures.

The printer is equipped with red "safe-light" and a white printing light which is controlled by means of a toggle switch. Manufactured by the Jackson Instrument Company, Dayton, O.

New Film Booklet

The Gevaert Co. of America issue a monthly bulletin called "Gevaert Sensitizer" which contains interesting and constructive information on various phases of photography. Article on photo finishing, hints on dark room work, plus a question-and-answer department appear in every issue. Anyone wishing to have this bulletin mailed to them should write to the Gevaert Co. of America, Inc., 423 West 55th St., New York City.

In an effort to be of every possible assistance to the amateur who specializes in doing his own dark room work, the Gevaert Co. of America, manufacturers of films, plates and papers, have printed a comprehensive booklet on formulas for developing. The book describes formulas for negative developing, paper developing, bathing, toning, intensifying, reducing, and other miscellaneous formulas. This booklet contains valuable information, is well put together, and is offered to amateurs free of charge. To obtain it, write to the Gevaert Co. of America, Inc., 423 West 55th St., New York.

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THE Dollina "O" is the most unusual value in the miniature field. Its many refinements include: automatic counting and film-locking device, built-in optical view finder, front lens focusing to about 4 ft., closed front, tripod socket, etched-in depth of focus table, attached range finder clip, loops for neck-strap and many other highly desirable features. Genuine leather cover and bellows. Makes 36 exposures on 35 mm. film.

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of the most dependable type, optically perfect, lens - synchronized, operating on the split-image principle. These cameras also have built-in optical tubular view finders and other refinements. The lenses are set in Compur Rapid shutters. They are priced as follows:

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Dollina II, With Schneider Radionar f/2.9	\$55.00
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With Zeiss Tessar f/2.8	75.00
With Schneider Xenon f/2	80.00
De Luxe Dollina III, has a built-in range finder in chrome mount, corrected for parallax, and many other refinements.	
With Schneider Radionar f/2.9	\$45.00
With Schneider Xenar f/2.8	60.00
With Zeiss Tessar, f/2.8	72.50
With Schneider Xenon f/2	77.50

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Ask Your Dealer

Literature on Request

MIMOSA AMERICAN CORPORATION

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Two Examples of Outdoor Lighting



Two photographs made exactly at the same time of day with the same daylight conditions, same lens stop and shutter speed on the same film, the exposure being 1/200th second at f 8. (Note that the ball which the girl is bouncing with her right hand is off the ground in both cases.)

The well-lighted picture was made with the Kalart Speed Flash with one standard size flash bulb.

MODEL No. 120—the newest Federal Enlarger, will take negatives from miniatures up to 2 1/4 x 3 1/4 inches. It has a f6.3 FEDAR 3 1/2" focus Anastigmat Lens and will make giant size enlargements.

Among the unusual features are: Calibrated easel, 16 x 18" baseboard with hinged type bordermaker and paper holder attached. Enlargements 2 1/2 to 7 times on baseboard; extremely fast exposure; extra sharp prints. Four masks for all popular size negatives. Booktype negative carrier with curved supports for cut and uncut films. Double diffusing plates supply evenly distributed intensified light and avoid magnification of dust spots. Built in diaphragm with red filter; 125-watt projector lamp included.

The retail price of MODEL No. 120 is \$17.95 and \$1.00 higher on the West Coast. Federal Model 505 continues to be a "best seller." Both machines are entirely made in the U. S. A. by Federal Stamping & Engineering Corporation.

Now You Can Own a Leica The Original Miniature Candid Camera

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Time-Payment plan, Today.

E. LEITZ, Inc., 730 Fifth Ave., N. Y., Dept. 92

QUESTIONS to the Editor

Q. I have a lens case to protect the lens and keep it clean. Would it be a good idea to line it with sponge rubber?

ANS. No. All rubber has a certain amount of sulphur, and sponge rubber has an overabundance of sulphur. Sulphur fumes from rubber have a tendency to discolor the lens surface. Every lens is sensitive to atmospheric conditions or acid fumes.

Where rubber lens caps are used, these are made on special order with an absolute minimum of sulphur content in the rubber.

Q. I use a Weston meter for measurement of negative densities before making enlargements. I have a contact printing box arranged as described in the article on page 41, February MINICAM. I get hardly any reading on the meter although I use a 100-watt bulb in the box.

ANS. A photoflood lamp should be used with the setup you describe. Since the lamp is on for but a few seconds while readings are being taken, you need not be concerned with the heating problem frequently met in conjunction with photoflood lamps.

Q. Can tray cleaner be used to clean a Viscose sponge.

ANS. Tray cleaner usually contains sulphuric acid and potassium bichromate. To clean a Viscose sponge use water only. Boiling water will remove most of the impurities in the sponge. Any remaining stains will not have any adverse effect on the material wiped by the sponge.

Q. When using a chrome alum shortstop, why do negatives sometimes show a blue stain?

ANS. This is caused by the bath being too warm. Keep the temperature of the shortstop the same as the developer. Do not leave negatives in it more than three minutes. The slight blue stain, however, has no ill effect.

Q. White scum sometimes appears on my negatives. This is removable sometimes with a wet chamois or a viscose sponge before drying, but after the negative dries, the white deposit seems irremovable. Wiping off the scum also sometimes leaves streaks. What is the cause and cure?

ANS. The deposit may be due to (1) Presence of hypo crystals. If so, additional washing is indicated.

(2) The scum may be due to aluminum sulphite stain. This is caused by an exhausted fixing bath. Cure: add acid to the hypo; or better, use fresh hypo solution. This deposit can be removed from the negative by immersing in a 10 per cent solution of sodium carbonate. Dissolve one ounce sodium carbonate in nine ounces of water. Use at about 65°.

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with precision-made minicam equipment

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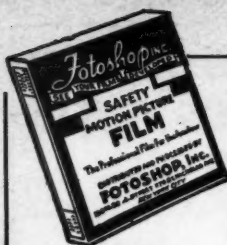


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(3) Sulphur stains. This is caused by hypo
that has too much acid or too little sulphur.
It is common especially in summer when hypo
becomes warm. Sulphur deposit is the most
difficult to remove, being insoluble in water,
acid, or even alkalis, like carbonate. To re-
move the deposit, harden the film in formalin.
Then immerse in a warm solution (120° F.)
of 10 per cent sodium sulphite. Another
method is to use the dry acid that comes in
the small box in Eastman Acid Fixer. A little
of this powder is dissolved in water and ap-
plied with a piece of soft cotton over the
negative until the scum is removed. The
negative then is rinsed and dried as usual.

**Q. Can more than one photoflash lamp be
used in one reflector?**

ANS. Yes. The bulbs may be fired simul-
taneously by fastening them together with a
rubber band. As the first bulb fires, the heat
ignites, by contact, the second one. This
works well at very slow speeds or with "open"
flash. It is not recommended for use with a
synchronizer because then the peak of the flash
of the second bulb occurs after the peak of the
flash of the first bulb.

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ACTION!

Written and illustrated

By David Conant

How to get dramatic results with
everyday subjects

GETTING action is simple enough when you train your camera on objects or persons who are in action. But almost every movie maker finds himself, from time to time, with a static subject who could be better photographed with static simplicity by a still camera. These static subjects are frequently relatives or visitors who have learned that you have a movie camera and who would just love to see themselves in the movies.

The static subject—let's call her Aunt Lizzie—makes a few timid wisecracks about her likeness to some movie star when she sees you trotting out the camera and the photofloods, and then sinks into abject apathy lightened only by a sickly smile.

Your first impulse, if you care a great deal about your home movie making, is to pretend to take pictures of Aunt Lizzie, and then later tell her, "Horrors, the camera was out of order." But doing that is an admission, on your part, of defeat and incompetence.

(Page 104, please)



Does Your Movie

By G. L. Mayo

ACTION drag introduces boredom into movies. Action drag most frequently occurs when the action is too prolonged and when non-essentials are included in the action.

Study the Hollywood products. Something is happening all the time, happening with a purpose. Hollywood ordinarily uses only the climaxes of the action, edits out all unnecessary footage.

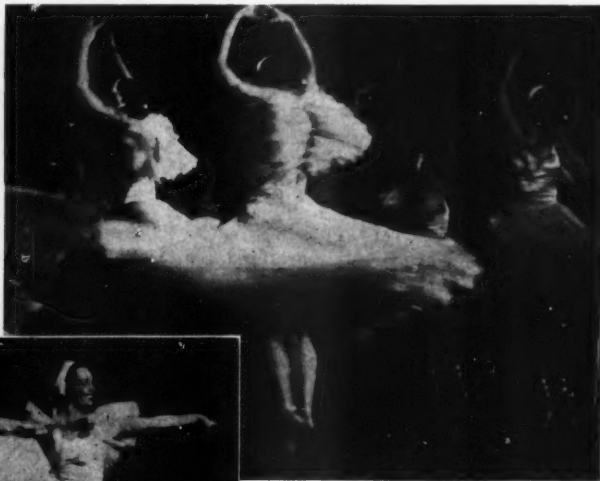
Consider so simple a matter as a person leaving a room. The first instinct of the movie maker is to photograph him in repose, then rising, walking, walking, walking some more, getting to the door, opening it, solemnly closing it. After this, the amateur movie maker may devote a few feet to the blank door just to assure you that the person is really gone.

In such a simple action, what are the points which describe the action? They are: (1) Rising from the chair. This indicates that the subject is about to do something. And (2) going out the door.

When you know the action climaxes in the simplest action, you have reached the core of action photography. Naturally, the camera user will concentrate on those points. He will use only enough footage between to join those two single climaxes together.

How much footage in between? Enough to suggest that the person is moving in some direction and enough to precede the opening of the door so that the two actions will be connected.

All this calls for a degree of discrimination in how your footage will be used. To fail to use discrimination means that the photographer concludes with a series of sequences in which action is pursued to the



- A premier ballerina does her stuff, perhaps 15 or 20 seconds of it. Stop shooting when you suspect that there is any monotony. Edit carefully.
- Unless they're long distance specialists, a mass pirouette should be worth 5 to 10 seconds. It doesn't hurt to cut in the middle since pirouettes can be pretty dull if pursued to the relaxed end.

Audience Yawn?



- A maximum of ten seconds (eight would be better) should take care of recording an impression of a girl getting on a bicycle and starting off. Figured into footage, this would be 5 to 7 feet on 16 mm film.

bitter end. Each uninteresting footstep across the room is photographed with great detail. And the audience viewing such a performance is bored.

The matter of choosing your action climaxes and editing out excess footage when it is uninteresting naturally brings up the matter of the footage value of various actions.

On an outdoors action shot, how much footage would a girl, starting off on a bicycle, be worth? Enough to show her in the process of getting started and then moving along with ease. But no more. Getting started might consume three seconds, getting smoothly under way, another three seconds. If the girl is clumsy, obviously the first one might be lengthened.

Fast-paced movies depend on suggestion and the ability of the imagination of the audience to fill the gap. The girl gets on the bicycle and starts off. She's going somewhere. The next scene shows her wheeling into a hamburger stand. In the next scene she may be seen eating a hamburger. The imagination of the audience fills in the details. She does not have to be photographed going into the horizon and

coming out of the horizon, looming larger and larger as she comes to the hamburger stand. She does not have to park her bicycle, open the door to the hamburger stand, and go through an elaborate pantomime ordering the hamburger. Only the action climaxes—three short scenes—are needed to tell the story.

Next time you go to the movies, notice



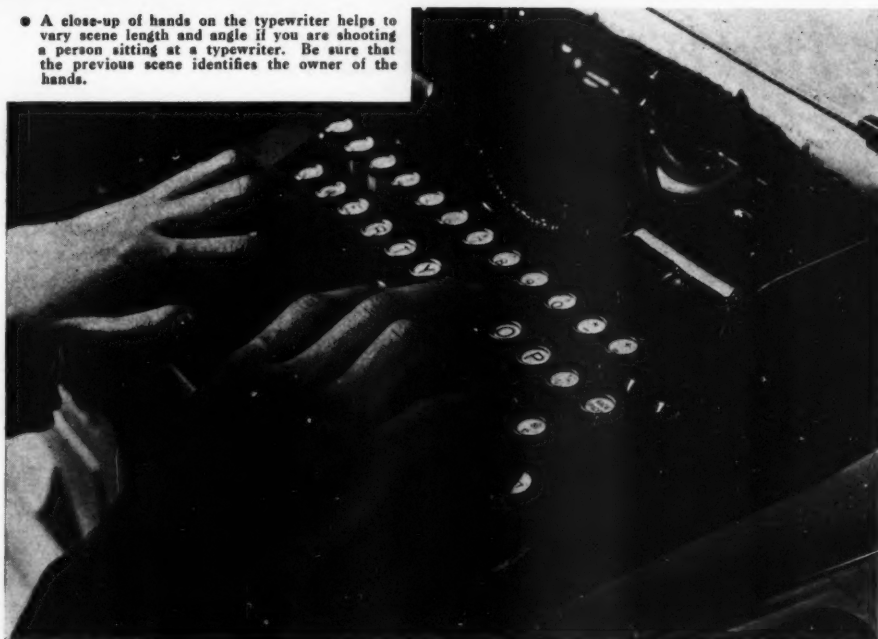
- Determine in advance the footage to allow for each action sequence.



- Two action climaxes in the business of rising and going out of the room. Rising might take three seconds, leaving, three seconds. Total footage depicting the man's exit—6 seconds. If you pick up excess footage in between, it can always be edited out.

how much is left to your imagination, notice how the scenes high-spot the climaxes of the action. And then try to resist an impulse to go home and start cutting out the dead footage that made the audience yawn.

- A close-up of hands on the typewriter helps to vary scene length and angle if you are shooting a person sitting at a typewriter. Be sure that the previous scene identifies the owner of the hands.



The Gentle Art of Suggestion

By Philip Resor

HAVE you ever noticed how often the Hollywood movies rely on you to supply the gaps? They don't make the job hard. They give you the suggestion and your mind fills in the gap.

Passage of time, for instance. Leaves flipping over on the calendar are standard. The birthday cake scene, showing five candles then a lap dissolve to a similar birthday cake with eighteen candles and a quick cut to the beautiful young lady now aged eighteen. And then the story goes rollicking on. The characteristic object is another standard. The handsome young man is shown with a close-up to an old fashioned ring. In later years, the scenes

are reversed. The ring is shown first to tell you that this is the same man, then there is a cut to the man now much older.

Little tricks suggesting passage of time call for a certain amount of imagination not to mention an infinite amount of cutting and splicing.

But such little tricks do help to vary the pace of the film, help to make it more interesting: A girl running across an open hilltop, for instance, might become boring if you prolong her running. But if you cut to twinkling feet continuing to run, you vary your pace, change the area of your scene and change the length of your scene.

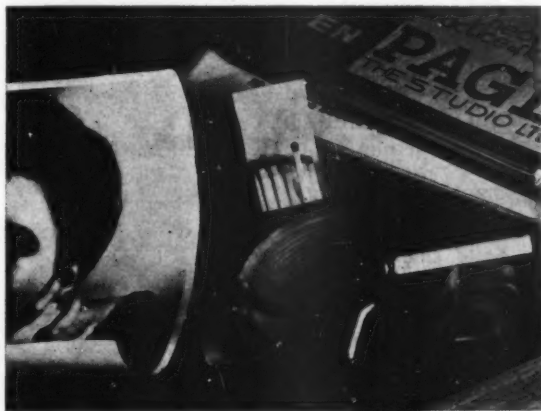
If you have the young author sitting at his typewriter in one of your home-made scenarios, you might begin with shots of the young author in three quarter length and then close-up to the hands on the typewriter. He becomes discouraged. There is no necessity for showing his face, scowling, dejected, unhappy. Instead, you can add dramatic touches by showing his hands hesitating over the typewriter, withdrawing the sheet of paper from the roller, tearing it up or crumpling it up and then a shot of his hands rolling a new sheet of paper into the typewriter with the brisk action of the typewriter keys as inspiration presumably returns again to the hero. Of course, in this sort of thing, it is important to have your secondary scene, such as this one is, following right on the heels of the more easily identifiable scenes of the author. The audience must know who is typing. Speculation is out.

A neat trick for showing the end of a party is to omit the shots of the departing

guests but show close-ups of full ashtrays and empty glasses. That will get the idea over. And your picture will be much better because of the little imaginative touch.

To indicate a fairly brief passage of time, show a whole cigarette lighted in an ashtray, then cut to another short scene in which the cigarette is very nearly burned out. Or for a somewhat longer passage of time show a fire burning brightly; then cut to smoldering embers. The candle transition is usually a good one. At the dinner table, candles can be shown just beginning to burn and then shown guttering in their sockets. No one knows to the minute just how much time has passed but there is a definite impression that time has passed.

If you want to suggest a change of season, say from Spring to Fall, simply close-up to some flowers in full bloom and then find a handful of dead, dry-looking stalks (unless you're a careful gardener, there should be some left over from last season) and photograph them on a fairly sparse looking area. If you are photographing in the Fall and you want to fake the spring scene, simply plant some artificial flowers in a grassy section of your lawn, being careful to cover up around the bottoms so that



● The start of a time lapse. (Above.) Notice that the cigarette has just been lighted.

● The conclusion of a time lapse. (Right.) Now the cigarette is pretty well burned down.



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the flowers won't look faked. If you are working this trick outdoors, try to choose a windy day so that there will be movement in the flowers. If you set up a miniature stage indoors, an electric fan or hand fanning will be a help in getting movement.

Such simple photographic tricks as this eliminate the necessity for excessive explanatory titles. In addition, they add interest in the way that a title rarely can. And finally, they give a professional touch to your movies.

Next time you're doing some movies and you think—"I'll explain this with a title,"—try working out a little trick that will say all that the title is meant to say. You'll find that your trick, if it's successful, will say it better than any title.

How to Get Action!

(Continued from page 99)

If you really would like to have some pictures of Aunt Lizzie, there's only one thing to do: Get her into action. The still camera would do if she intends to remain in perfect repose. The movie camera is designed to record action.

Now, to some movie makers, getting Aunt Lizzie into action is taken to mean getting Aunt Lizzie to run across the room or turn a handspring. Either of these would be an improvement over static apathy, but action need not be so strenuous.

Get the subject to do something. For two reasons. In the first place, when subjects are doing something, they become interested in their own actions and so lose a great deal of their self-consciousness. In the second place, action—any action—causes changes in facial expression.

The people who are really "dead-pan" are few and far between. Most people are actors in the sense that their faces do register some degree of emotion. Faces do change expression and in this constant change of expression you have one of the major reasons for using a movie camera.

Consider the illustrations for this article. The girl did not know it but the photog-

rapher *did* know that he wanted to shoot her, so he watched her, trying to discover those bits of action which were characteristic of her and which required no particular effort.

The girl in repose is pretty uninteresting. She was nervous and ill at ease. Her only question was, "What shall I do?" She sensed the need for some action but she didn't quite know what kind of action.

She hardly considered rouging her lips as action. But it was. And while she rouged her lips, her expressions ranged all the way from distorted inquiry to smug satisfaction at the conclusion of a job well done. She smoked, and with something of an air. So the photographer asked her to light up. She still refused to believe that this was action but when she took a cigarette and lit it, her self-consciousness disappeared and her interest was centered on the business of lighting the cigarette.

In no case were the actions strenuous. They did not require great effort. They were characteristic actions of hers, actions that she performed in public frequently, so she had no feeling of being conspicuous or ill at ease.

Many movie makers carry directorial expressions such as these: "Now go over to Joe and whisper something in his ear. That's right. Now put your arm around his neck and look into his eyes. Yeah, that's right. Boy, is this a scream! Now, let's see. Okay. You walk out into the hall and then you come back and call the dog. He jumps up on you. You pat him. Then you lead the dog over to Jane and

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try to get him on Jane's lap. And don't block off Jane's head because we want her in it too."

All the while this is going on, the victim has a painful feeling of embarrassment and probably a sneaking notion that you are going to show these pictures and laugh yourself silly over them.

It's important to remember that most people are not good clowns. Their inferiority complexes usually triumph over the theatrical instincts everyone has.

A few simple rules that I have found advantageous in photographing people are these:

1. Always study the people whom you are going to shoot to learn what their characteristic actions are.
2. Never expect people to clown unless they want to. Then let them clown to their heart's content.
3. Never ask people to perform any

strenuous action unless they show an easy willingness to oblige.

4. Never ask the subject to perform actions which they wouldn't ordinarily perform casually in the presence of people.

5. Never expect the subject to suggest the actions. He probably won't anyway. Since you're behind the camera it's up to you to suggest what he should do.

6. Never photograph anyone who is unwilling to leave an attitude of blank repose. Most people are glad to do something if only you will suggest what they should do. And if the thing you suggest is within easy range of their abilities, they will be grateful to you.

These simple rules of course are hardly the background for great epics. But they do help the movie maker to get what his camera is set up to record—action.

Movies mean action—and if the action isn't there, it's up to the camera man to create it.

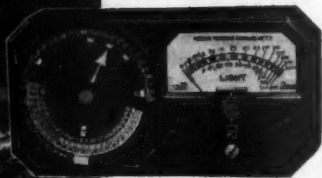
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